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POSTERIOR APPROACH TO THE HIP JOINT IN PROSTHETIC REPLACEMENT

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The majority of the classical surgical approaches to the hip joint have some or all of the following disadvantages when used for the purpose of replacement of the femoral head.

1. Bleeding and shock during operation.
2. Inadequate exposure of the acetabulum.
3. The danger of postoperative dislocation because of division of the anterior structures during operation.
4. Interference with the abductor mechanism causing abductor inadequacy, with a positive Trendelenberg sign and a limp.

Anterior Approaches

Smith-Petersen's^{1,2} anterior approach is well known and widely used for many purposes. In the surgery of prosthetic replacement it suffers from all the deficiencies mentioned above.

The Heuter method is advised by Judet *et al.*^{3,4} On their own admission, visualization of the acetabulum is difficult and very strong retraction is required. Any surgeon who has attempted it will agree. Postoperatively, the danger of anterior dislocation exists and precautions are necessary to control external rotation of the leg.

Luck⁵ has described a transverse anterior approach which suffers from much the same disabilities.

Other anterior routes have been described in the past by Barker, Lucke, Hoffa-Lorenz, Albee, and Nelaton, but these are now of historical interest only.

Lateral Approaches

A true lateral approach to the hip joint depends on division and reflection upwards of the greater trochanter with its attached muscles. Good exposure is obtained, but the interference with the abductor mechanism leads to poor results if a prosthesis is used, because it is most difficult to obtain satisfactory union of the bony fragments without lengthening and muscular weakness. Such approaches have been described by Oliver, Murphy, and Robert Jones in the past, and more recently by Jergesen and Abbot.⁶

Postero-lateral Approaches

Approach to the hip joint from behind was not much used in the English-speaking world until Gibson's⁷ restatement of the Kocher⁸ procedure, with slight modifications. It came at a time when the attention of orthopaedic surgeons was focussed on the works of the Judet brothers and offered an easy, bloodless route to the hip. However, it retained the disadvantages of postoperative dislocation and abductor insufficiency. McFarland and Osborne⁹ recognized this latter disability and attempted to overcome it by detaching the gluteus medius subperiostially in continuity with the anterior part of vastus lateralis, but the gluteus minimus was still

divided. In practice it was often unsatisfactory because the continuity between the two muscles was too tenuous, and re-attachment difficult. In any event, the anterior structures having been divided, postoperative dislocation could still occur.

Marcy and Fletcher¹⁰ described a modification of the postero-lateral approach to the hip for the insertion of a femoral-head prosthesis. Their operation was a great advance, since they retained the abductors intact and dislocated the femoral head backwards after division of the small rotator muscles. They avoided all the disadvantages enumerated above.

Posterior Approaches

The Langenbeck¹¹ incision was designed for posterior drainage of the hip joint, as was that of Ober.¹² While satisfactory for their purpose, they do not allow any working space in the hip joint.

Osborne¹³ studied the known approaches and, as a result of cadaver experiments, suggested a true posterior approach for "infected" cases of any type requiring a direct attack on the joint or head and neck of the femur with subsequent drainage.

The approach to be described was developed in order to avoid the inherent disadvantages of other methods, and to give an exposure that would allow various procedures to be performed. It has been used on a great number of occasions since 1954, in order that different operations might be carried out in and around the hip joint. The majority of these operations have been for prosthetic replacement. Credit must be given to the previous work of Osborne¹³ and Marcy and Fletcher¹⁰ which pointed the way. Moore¹⁴ has recently described his 'southern exposure' which is essentially the same and maintains all the benefits of this approach.

TECHNIQUE OF OPERATION

Position

The patient lies fully prone with the operation side at the edge of the table. A sandbag is inserted under each anterior superior spine to allow free abdominal excursion during respiration. Draping is carried out in such a way that the limb is freely mobile.

Incision

The only bony landmark required is the tip of the greater trochanter. The incision is commenced about 4 inches medial to this point and about 1½ inches above it, and is carried laterally and downwards in a curve to a point just below the tip of the trochanter and then longitudinally down the back of the lateral aspect of the thigh in the line of the femoral shaft, for 4 inches (Fig. 1).

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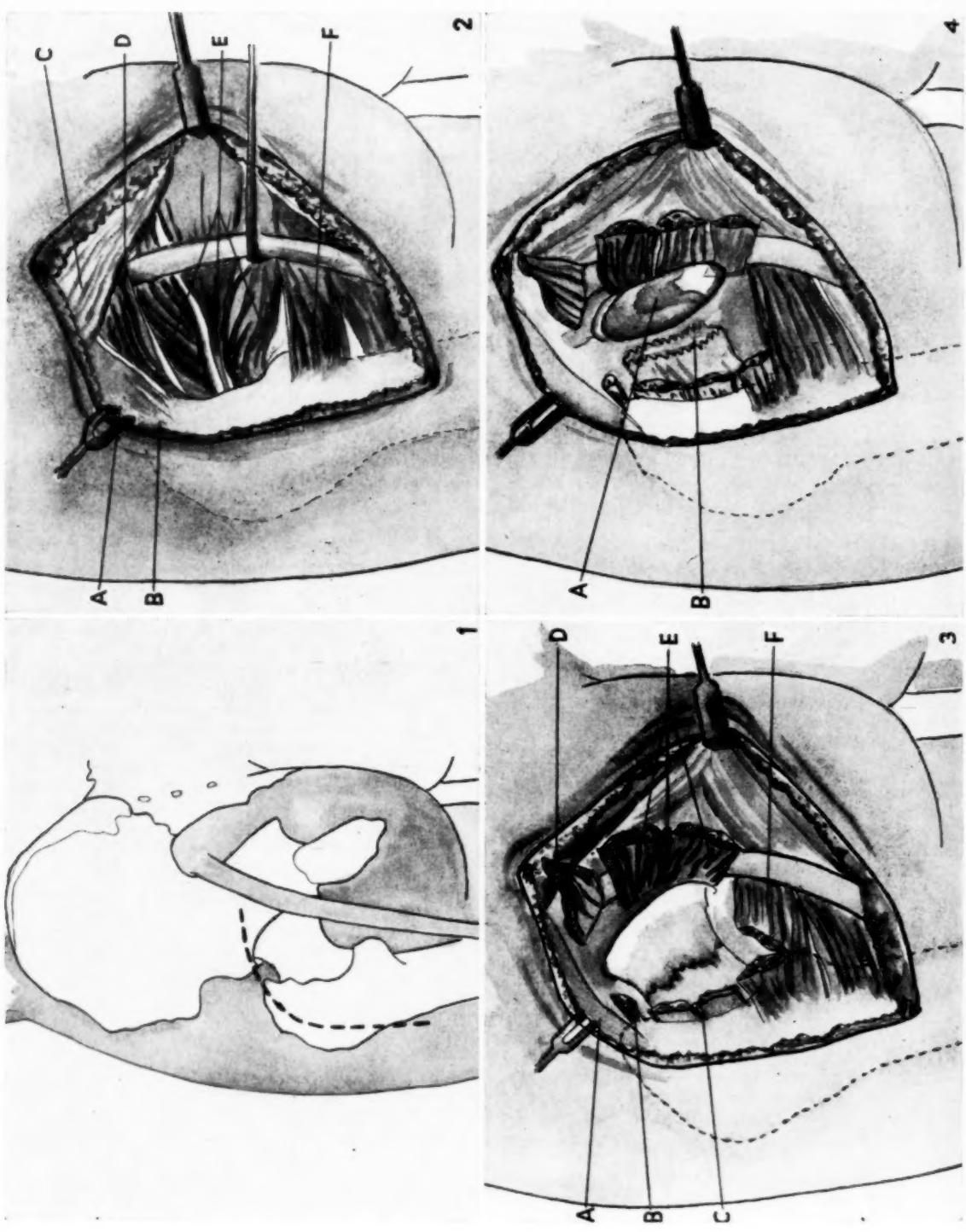


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Development

Skin and subcutaneous fat are divided to expose the gluteus maximus and the fascia lata (ilio-tibial band). The fascia lata is incised longitudinally in the extent of the vertical component of the skin incision. The index finger is then inserted deep to the gluteus maximus at the upper end, and the tendinous structures divided medially with scissors until the fleshy fibres are reached. From this point, further medial separation of the muscle mass is achieved digitally. If this is confined to the extent of the skin incision, there is no bleeding and no danger to the nerve supply. Brash¹⁵ has shown that the neurovascular hilum of the lower part of the gluteus maximus is confined to the medial half of the muscle.

The muscle and attached fascia lata are then reflected downwards and medially and the sciatic nerve is identified at the medial end of the operation field (Fig. 2).

The deep muscles in immediate posterior relationship to the hip joint are exposed after a thin layer of fat covering them has been separated with scissors and reflected downwards. They are identified from above downwards as gluteus medius, piriformis, obturator internus with the gemelli and quadratus femoris. The superior edge of piriformis is defined by blunt dissection and the tendons of insertion of this muscle and the obturator internus and the gemelli are divided, leaving short stumps for re-attachment, and the muscles reflected medially (Fig. 3). A small twig from the ascending branch of the medial femoral circumflex artery is encountered here. It is not always necessary to divide piriformis.

More anteriorly, the obturator externus is treated in a like manner. Subsequent manoeuvres are usually facilitated by division of the upper half of the insertion of the quadratus femoris.

The capsule of the hip joint is opened along the line of its attachment to the margin of the acetabulum. The joint is easily dislocated by flexing the knee and internally rotating the femur; a skid or a Martin's gouge may be of assistance. If the operation is being performed for a fresh subcapital fracture or an avascular necrosis, the head is removed with a gouge or a cork-screw after the femur has been rotated internally.

The next stage demands close attention because visualization of the femoral neck is not as good from behind as it is from the front. With the femur in maximum internal rotation, a broad osteotome is driven through the base of the neck at an angle designed to receive the flange of the prosthesis. These angles are different for the Thompson and the Moore

Fig. 1. The bony landmarks and the relationship of the sciatic nerve. The skin incision is shown. *Fig. 2.* The relation of the muscles to the back of the hip joint; the sciatic nerve is retracted medially. A=Gluteus medius, B=tip of trochanter, C=gluteus maximus — reflected, D=piriformis, E=obturator internus and the gemelli, F=quadratus femoris. *Fig. 3.* The muscles have been divided near their insertions and reflected medially. After opening the capsule an excellent view of the neck of the femur is obtained. A=Gluteus medius — intact, B=piriformis tendon, C=insertions of obturator internus and gemelli, D=piriformis — reflected, E=obturator internus and gemelli — reflected, F=quadratus femoris — partly divided. *Fig. 4.* After removal of the head of the femur the whole acetabulum is clearly visualized. A=Acetabulum, B=stump of neck.

prostheses. The osteotome is slanted forwards in order to remove a little more bone anteriorly so as to allow about 10° of anteversion of the head when the prosthesis is fully seated. It has been thought that too much anteversion of the prosthesis may be a cause of pain. Pollard¹⁶ reports a suggestion from the Columbia-Presbyterian Medical Centre in New York, that if the prosthesis is inserted so as to lie in the neutral position or even in a little retroversion, the patient may be more comfortable when walking is commenced. Care must be taken to remove sufficient of the neck, otherwise the limb is relatively longer and reduction very difficult.

If acetabuloplasty is necessary, this is performed before the prosthesis is inserted.

The dislocation is easily reduced by flexion of the hip over the edge of the table, and direct pressure forwards on the head of the prosthesis. The leg is then extended to lie next to its fellow, but with some external rotation, and the wound closed in layers. The short rotator muscles are sutured to the tendinous stumps with a double loop of silk, and the quadratus femoris attached to periosteum. The fascia lata is repaired with interrupted chromic catgut and the gluteal fascia approximated, but the stitches are not inserted through the muscle belly. The skin is then closed. No drainage is necessary.

Postoperative Care

The patient is returned to bed without any retentive apparatus. There is no shock during surgery and very little complaint of pain afterwards. Active straight leg-raising exercises are commenced on the third day and the patient may be allowed out of bed to sit in a chair. For demonstration purposes, patients have been allowed to walk with assistance on the day following the operation, but the usual practice is to commence four-point crutch walking at about the seventh postoperative day. Recovery of gait is rapid, and little if any residual limp is apparent.

RESULTS

The cases analysed below were all treated in the Department of Orthopaedic Surgery at Addington Hospital. The operations were performed by visiting staff as well as registrars and house surgeons with varying levels of experience.

This series concerns 61 patients in whom a vitallium hip prosthesis was introduced via a true posterior approach to the hip joint. The Thompson prosthesis was used 59 times and the Moore prosthesis only twice.

The average age of these patients was 75·4 years, the oldest being 90 and the youngest 39 years. There were 7 males and 54 females. The indications for surgery were, primary operation for subcapital or transcervical fractures of the femoral neck and secondary operation following failed pinning or

TABLE I. BREAKDOWN OF CASES

Indication for surgery	No. of cases	Average postoperative hospital days
Primary	43
Secondary	15
Osteoarthritis	3

avascular necrosis, and osteoarthritis. The breakdown of cases is shown in Table I.

There were 10 deaths in the series, i.e. 16·4%, of which 4 may have been directly due to the operation; 2 cases de-

veloped sepsis and 2 died within 24 hours of operation. In the remainder the outcome was probably influenced by age or

TABLE II. CAUSES OF DEATH

Age	Indication	Cause of death	Survival (days)
58	Failed pin	Old hemiplegic—sepsis	44
84	Failed pin	Cerebrovascular	1
84	Fracture	Cerebrovascular	15
74	Fracture	Cardiovascular	33
74	Fracture	Cardiovascular	42
81	Fracture	Cardiovascular	25
64	Failed pin	Cardiovascular	6
84	Fracture	Diabetic. Cerebrovascular	31
87	Fracture	Decubitus ulcers—sepsis	30
70	Fracture	Cerebrovascular	1

previous pathology. The causes of death are shown in Table II.

The average postoperative stay in hospital was 27 days, but, after excluding 15 patients who remained in hospital for longer than 30 days because of complications, the average stay of the remaining 46 uncomplicated cases was 21 days. The reasons for prolonged stay in these 15 cases, who averaged 47 days in hospital, is shown in Table III.

TABLE III. REASONS FOR PROLONGED STAY IN HOSPITAL

Complication	Duration (days)
Sinus formation	58
Sinus formation	49
Sepsis	44
Senility	31
Uraemia	66
Cardiac condition	33
Senility	51
Split femur	69
Cardiac condition	42
Diabetes	70
Diabetes	31
Spondylarthrosis	43
Social problem (disposal)	44
Psychiatric condition	32
Sinus formation	38
Total . . . 15 cases	701 days
Average . . .	47 days

The follow-up on cases was from 1 month to 3 years. All patients continued to report improvement for 6 months, but a certain number did not report back since they were holiday visitors to the city. I was struck by the remarkably good range of movements and absence of pain in the hip joint in the vast majority of cases. It was exceptional not to find a 90° range of hip flexion with 20° - 30° of abduction and 10° of adduction. Any residual restriction was usually of internal rotation, but very often this matched the range in the other hip. Only in 2 cases was it recorded that a positive Trendelenberg sign was present, indicative of abductor insufficiency, and in both

cases it was after secondary surgery. At the time of their last visits, 14 patients used walking sticks for security, but all could get about without them in their homes. Only 1 patient, who had had an operation for osteoarthritis, complained of disabling pain in the hip.

COMMENT

This is a most versatile approach to the hip joint and, besides prosthetic replacement and vitallium-cup arthroplasty, it has been used for internal fixation of the acetabular fragment after fracture-dislocation of the joint. This approach is also used for Brittain's ischio-femoral arthrodesis under direct vision, but in this case the only deep muscle reflected (to allow identification of the lesser trochanter) is the quadratus femoris. The line of osteotomy is then established and carried medially to the ischium, which can be palpated. The sciatic nerve is available for reference, although screened in a position of safety by the retracted quadratus femoris. This approach is also of value in open reduction and fixation of a slipped epiphysis since the exposure should not jeopardize the circulation of the head to the same extent as the usual anterior approach. The horizontal limb of the incision can be used for drainage of the hip joint, as indicated originally by Osborne.¹³ Excellent exposure of the ischium is also possible if this is required.

SUMMARY

A true posterior approach to the hip joint is described. It is accompanied by little bleeding and no shock, and avoids the disadvantages of abductor insufficiency and postoperative dislocation of the hip. The approach can be used for many procedures in and about the hip joint.

I am grateful to my wife, Dr. Sylvia Kisner, for the illustrations. The anatomical studies on which this approach is based were carried out while I was a part-time lecturer in anatomy at the Medical School, University of Natal.

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South African Medical Journal : Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL : VAN DIE REDAKSIE

CENTENARY OF THE ADDINGTON HOSPITAL, DURBAN

The Addington Hospital, direct descendant of Natal's first government hospital, will celebrate its centenary on 10-17 June 1961. That this hospital has remained a vital modern institution, keeping well abreast of the times in all respects, is shown by the services it has been rendering to the European and Coloured population of the City of Durban and the neighbouring areas, by the quantity and quality of research work carried out at the hospital, and by the new four-million rand extension project which is well under way.

The building of the first government hospital in Durban was suggested by Lt. Governor Scott who, in 1858, wrote to the Rt. Honourable Lord Stanley, Minister for the Colonies, as follows: 'I now propose to erect a hospital at Durban at a cost of about £800. The hospital will be a Native hospital, but, as there is no other building of the kind at Durban, it will be open for the White colonists . . .' This building, which was of brick, iron-roofed, and which contained two wards, was completed in 1861 on an erf extending from Smith Street to the bayside.

With the growth of Durban the work of the little bayside hospital outgrew its capacity, and in the late 70's the Natal Government decided to build a new and larger hospital. This new hospital, which superseded the old bayside hospital, was built on a site nearer the Point, and was completed in 1879 at a cost of £16,000. Subsequent additions brought the cost of the building up to £500,000 in 1945, and the present extension project will turn the Addington Hospital into a proud modern institution.

Medical Services Rendered

Addington General Hospital serves the European and Coloured population of the City of Durban and the neighbouring Coastal area. It also provides specialist services for the Province of Natal. In addition to the large residential population, the hospital is responsible for the treatment of an ever-increasing floating population of holiday-makers who come from all parts of the Union and the Rhodesias.

At present thoracic surgery, neurosurgery and plastic surgery are temporarily accommodated at Wentworth

Hospital, but as soon as the new buildings are complete, these special services will take over their respective departments in the new 16-storey block at Addington Hospital. Since the last World War additional medical services have been provided which include a neuropsychiatric unit and outpatient clinics for cardiovascular disease, diabetes, and asthma, and the District Nursing Service has been consolidated.

Scientific Work and Research

Scientific work and clinical research have been greatly stimulated by the close association of the hospital with the Medical School of the University of Natal. Many members of the visiting medical staff of Addington Hospital are actively engaged in teaching at the medical school and King Edward VIII Hospital, and their scientific interest in clinical research is indicated by their contributions to medical literature. It may be remembered that, in February 1955, 98 members of the nursing staff were struck down with epidemic myalgic encephalomyopathy, the so-called 'mystery disease' which was reported in the *South African Medical Journal* the same year, and the whole subject was subsequently reviewed by a member of the visiting medical staff of the hospital in the *Lancet* in 1959.

A subject of topical interest to residents and visitors alike, is the incidents of sharkbite occurring on the Natal Coast. Active research is being undertaken by the hospital in conjunction with the South African Association of Marine Biological Research, and informed articles have been published on the prevention and treatment of these accidents.

Teaching

The teaching programme of the hospital includes post-graduate courses for general practitioners, the last course being conducted in association with the Medical School of the University of Natal. In the general hospital, clinical meetings are held for graduates every month, and regular case conferences take place between the Departments of Medicine, Surgery, Obstetrics and Gynaecology, Ortho-

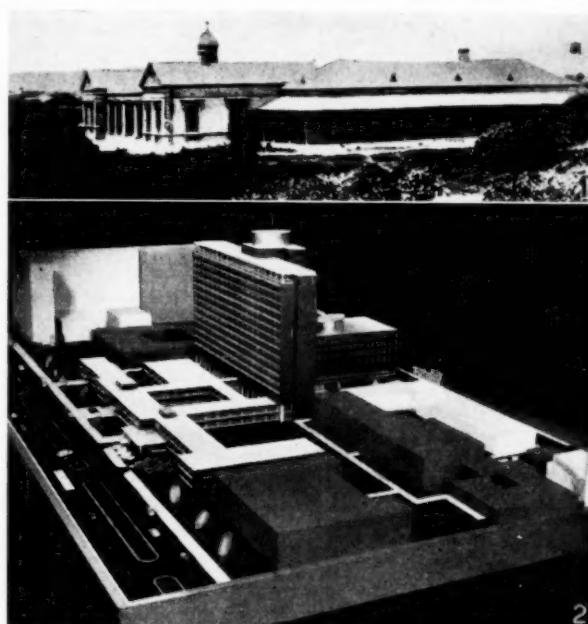


Fig. 1. Addington Hospital, Durban, 1878. Fig. 2. Model of new outpatient department and 16-storey inpatient block.

paediatrics, and Radiology. The Durban group of Provincial Hospitals (Addington, Wentworth, and King Edward VIII Hospitals) provide excellent facilities for postgraduate training in anaesthetics. The Department of Anaesthesia at Addington Hospital is approved by the South African Medical and Dental Council and the Faculty of Anaesthesia of the Royal College of Surgeons of England. Courses are in progress in the basic sciences for the higher diplomas in Anaesthetics.

The children's hospital, adjacent to the general hospital and under the same administration, is recognized as a teaching hospital and is closely integrated with the paediatric department of the University. Regular clinical meetings and teaching rounds for graduates are held at the hospital and all members of the hospital staff, both visiting and full-time,

meet every month to discuss special problems and review current literature.

The medical staff have reason to be proud of the high standard of instruction given in the Nursing College of the hospital and they, themselves, have gladly taken part in the teaching for the University Diploma in Nursing. During the centenary reunion the visiting medical staff have offered an interesting and instructive postgraduate refresher course for nurses.

In this special issue of the *Journal* a number of articles are published to commemorate the *centenary of the hospital*. These include articles on the history of hospitals in Durban, the changing face of medicine, and reports on research work carried out at the hospital.

HOSPITAAL EN GEMEENSKAP

'n Hospitaal staan soms in 'n heel besondere verband met die omgewing wat deur hom bedien word. Orals oor die wêreld is daar voorbeelde van sulke hospitale, en in ons eie land is daar ook verskeie hospitale wat op so 'n spesiale verbondenheid van gemeenskapsdiens kan roem.

In Kaapstad kan ons byvoorbeeld die Somerset-hospitaal noem. Hierdie hospitaal het op 18 Augustus 1959 sy honderdste verjaardag gevier. Die Somerset-hospitaal is die direkte afstammeling van die eerste hospitaal in die land wat in 1656 deur Jan van Riebeeck gestig is. Gedurende sy hele geskiedenis het die 'Somerset' 'n spesiale plek ingeneem in die gemeenskapslewe, nie net in Kaapstad nie, maar ook wat betref die hele land. Dit is so omdat die eerste twee dokters wat in hierdie land gekwalifiseer het, nl. wyle dr. L. Mirvish en dr. J. B. Solomon, hul kliniese werk in hierdie hospitaal geleer het, en omdat 'n groot aantal uitstaande dokters in die mediese geskiedenis van ons land, met dié hospitaal geassosieer was.

Die Addington-hospitaal in Durban, wat vanjaar in Junie sy honderdjarige bestaan herdenk, is ook so 'n hospitaal. Die Addington-hospitaal is weer die direkte afstammeling van Natal se eerste regeringshospitaal wat in 1861 op 'n erf in Smithstraat gebou is, teen 'n onkoste van ongeveer £800. Sedert daardie tyd het die 'Addington' steeds gegroeи en nog altyd 'n dinamiese rol gespeel in die mediese beroepslewe in Natal en in die gemeenskapslewe in die algemeen. Vandag is die Addington-hospitaal 'n trotse, moderne inrigting wat mediese dienste van alle soorte op die hoogste vlak aanbied, en wat ook geleenthede daarstel vir doelgerigte wetenskaplike navorsing. In hierdie spesiale uitgawe van die *Tydskrif* plaas ons 'n aantal artikels waarin die rol wat die Addington-hospitaal vandag speel, duidelik weerspieël word.

In 'n land soos Suid-Afrika is dit egter nie net spesiale groot hospitale met opleidingsgeriewe wat belangrik is nie. Oor die lengte en breedte van ons land is kleinere hospitale versprei, waarin ons mense behandel en verpleeg word. Hierdie hospitale staan oor die algemeen na aan die hart van die mense wat hulle bedien.

Ons weet dat verskillende punte van kritiek teen die bestaan van die kleinere hospitale geopper word. So word daar, byvoorbeeld, aangevoer dat daar nie verpleegsters genoeg is om in die personeel-behoeftes van soveel hospitale te voorsien nie. Daar word ook van tyd tot tyd twyfel uitgespreek oor die wenslikheid dat algemene praktisyns, byvoorbeeld, groot operatiewe procedures op die platteland onderneem.

Hierdie argumente het wel trefkrag. Maar, ons het daar geen twyfel aan nie dat ons plattelandse gemeenskappe nog baie jare lank hierdie soort hospitaaldienste nodig sal hé. Dit is maar menslik om jou dierbares so na as moontlik aan die huis te hé as hulle siek is.

Wat wel gedoen moet word, is om 'n radikale landswye propagandaveldtog op tou te sit met die doel om sovele moontlike verpleegsters te werf. Daarby moet die opleidingsgeriewe en huisvesting en besoldiging van verpleegsters op die hoogste moontlike vlak geplaas word. Verpleegsters is mense wat die gemeenskap in die werklikheid dien met hul 'lewensbloed'. Die gemeenskap is as 'n ereskuld aan hulle niks minder nie as die 'beste' verskuldig.

Ook moet daar stappe gedoen word om dit moontlik te maak vir meer praktisyns om chirurgiese en mediese hospitaalwerk op 'n bevredigende vlak te doen. Daar is orals oor ons land algemene praktisyns wat as modelle van verantwoordelike geneeshere kan dien. Maar, terselfdertyd laat ons opleiding, veral wat betref geleenthede vir nie-spesialistiese nagraadste studie, nog veel te wense oor. Dit is om hierdie rede dat ons die pogings van ons Bloemsfonteinse kollegas om meer en beter nagraadse studiegleenthede daar te stel, nog altyd volmondig ondersteun het.

Van die grotere hospitale in ons stede, of hulle nou ook al private hospitale of regeringsinrigtings is; van die opleidingshospitale aan ons universiteitsentrum; en van al die baie kleinere hospitale op ons plattelandse dorpe bly die volgende nog altyd waar: 'n hospitaal is so goed of so swak soos die ondersteuning wat hy van die gemeenskap kry waarin hy funksioneer.

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YESTERDAY, TODAY AND TOMORROW

J. A. MACFADYEN, M.A., D.M.(OXON.), M.R.C.P. (LOND.)

Senior Visiting Physician, Addington Hospital, Durban

Nothing shows the change in medicine in the last 35 years more than contrasting the medical wards of Addington Hospital in 1925, as I first knew them, with the wards at present under my care.

Typhoid

At that time typhoid fever was perhaps the greatest challenge to nursing. It was exceptional to have no case of typhoid in the male or female wards. More often than not more than one case would be in any medical ward. During the last year we have had only two cases of typhoid—a mother and daughter infected from the same source.

Dysenteries

Dysenteries (bacillary and amoebic) were common. It was exciting in those days to define the frequency of amoebic dysentery, which was found to be much more common than had been formerly believed. Amoebic liver abscess accounted almost invariably for at least one bed in a ward at any time. It was instructive to find that intramuscular injections of emetine hydrochloride, combined with aspiration of the abscess, gave better results than open operation which had been formerly practised. It became appreciated that adherence to the dictum 'where there is pus, let it out', was followed by secondary infection in a large number of cases with open drainage.

A time was to come when the diagnosis of amoebic dysentery became too facile, and many of the multitudinous symptoms put down to it were to be evaluated more accurately and judiciously as being due to functional or other causes. In the last few months we have had only one proved case of amoebic dysentery. Bacillary dysenteries were common in summer. They were treated by a process of attrition; sodium sulphate and acid sulph dil. being given in small frequent doses until the stools slowly became normal.

Pneumonia

Pneumonia, second only to typhoid, was an illness calling for skilled nursing. In those days there were many more frank lobar pneumonias than we see today, with abrupt onset, fastigium, and sudden crisis, often associated with collapse. Today, with the exception of cases due to Friedländer's bacillus or a penicillin-resistant staphylococcus, most cases of pneumonia may almost be regarded as minor illnesses, provided the suitable antibiotic is available.

Malaria

Malaria, mainly subtropical, was very common. No case of pyrexia was investigated without the search for malaria parasites, and often a patient with a doubtful PUO was given quinine empirically, so as to be sure that one was not caught out. Today months go by without one case of malaria in the wards, and then it is usually a patient off a ship, or one who has travelled in other parts of Africa. What a wonderful triumph has been achieved by public-health measures in our lifetime! Blackwater fever was a dreaded and not uncommon complication. We have not had a case of blackwater fever for

years. Almost every patient with a difficult diagnosis had to have a blood Wassermann reaction done, for many clinical problems, in almost every field of medicine, were only solved by including specific disease in the differential diagnosis. Today, in Europeans, a positive reaction is the exception rather than the rule, and one's skill in giving intravenous NAB has become rusty owing to the easier, shorter, and more effective treatment by means of intramuscular penicillin.

Peptic Ulcer

Peptic ulcer was common then as it is common today. But if one's memory does not play one false, there seemed then to be proportionally more gastric ulcers. Today, there are immeasurably more duodenal ulcers. In those days the peptic ulcer patient was conscientiously and strictly kept in bed on milk and alkalis, to the exclusion of almost everything else. It was disconcerting to find that the milk-alkali syndrome not very infrequently occurred in one's most meticulous and law-abiding patients. Partial gastrectomy was then less commonly and less easily called upon to cut the Gordian knot of chronicity.

Rest in Bed

Rest in bed was more strictly insisted upon for many diseases and, although phlebothrombosis and pulmonary embolism were not unrecognized, I cannot but feel that they did not occur as often as they do today. Perhaps they did, but were not diagnosed as such, and only the more serious cases were recognized.

Cardiac Disease

Cardiac disease was ever with us. The most common causes of congestive failure were rheumatic heart disease and hypertension, with specific aortitis as a runner-up. Coronary thrombosis was beginning to impress itself as an alternative cause, but known coronary occlusions were comparatively uncommon. How different is the present position when recently, out of a male ward of 30 beds, 13 were occupied by men with coronary occlusion! Angina pectoris occurred of course, but one wonders how many cases of this nature would today have been diagnosed as coronary thrombosis. Peripheral vascular disease today seems to be more common, and it appears to occur at a younger age.

Other Conditions

Functional disease then, as now, was all too common, but the cases one remembers showed signs of gross hysteria rather than symptoms of anxiety states, as is seen so often today.

The wards were full of cases of tuberculosis before the King George V Hospital relieved the situation. Only a few suitable cases were sent to Nelspoort Sanatorium, and artificial pneumothorax was yet to become a common method of treatment. Rest in bed was the most effective treatment that we could offer.

Malignant disease has probably changed less than anything else from the diagnostic and therapeutic points of view.

With what enthusiasm did we start to feed patients with pernicious anaemia on whole liver (to be followed soon by intramuscular injections of crude extract), and to realize that we had something to counteract the hitherto fatal effects of a megalocytic anaemia.

A streptococcal septicaemia was then the most dreaded of infective illnesses, for which nothing effective could be done. Almost the same could be said for meningococcal infections, for which repeated lumbar punctures were about all that could be offered.

CONCLUSION

The good old days? By no means. There is almost nothing that today is not better done or more easily and safely performed. It is a privilege to have lived, in the course of one

working life, through a time so full of change for the better.

But what of the future? It is probable that the present tendencies towards increased specialization and the fragmentation of medicine will continue, that efficiency will increase and that the laboratory and machine will play a greater and greater part in the new sixteen-storey building which is rising from the ashes of the old Addington Hospital.

In the welter of specializations, however, one hopes that the general physician will remain to act as coordinator, interpreter, general confidant, and friend of the patient. Without such a pilot and the study of the patient as a whole, whatever the technical advances, colossal errors of judgment are bound to occur; and the patient will be left starving in a land of plenty.

HISTORY OF GOVERNMENT HOSPITALS IN DURBAN*

1858—1945

The Late MAURICE G. PEARSON, F.R.C.S., at one time Senior Surgeon, Addington Hospital, Durban

In 1856 Natal became a Colony distinct from the Cape of Good Hope of which it had hitherto been a province—and often a troublesome one at that. The change was made on the recommendation of Sir George Grey, Governor of the Cape, who, during the previous year, had paid a visit to Natal and had made a grant of £1,000 for the establishment of the hospital which bears his name at Pietermaritzburg. It is probable that he also suggested a hospital at Durban, but it was Mr. John Scott, First Lieut. Governor of the Colony under its new constitution, who took active steps to achieve this in 1858.

Durban was at that time a small town of 11,000 European inhabitants though it had had its own Mayor and Corporation for 5 years. It was a primitive place. Its transport was entirely by ox-wagon and none of its roads were hardened. Ox-wagons sank axle-deep in the sand of West Street and had to be pulled out by a double-span. Durban Bay was a sandy desert except at high tide when small ships could come in to discharge their cargoes direct into the ox-wagons. The wagons trekked out across 'the beach', i.e. the bayside which was also the favourite bathing beach. The Ocean Beach, which we know now as the play-place and bathing site for thousands of holiday-makers, was at that time a solitary waste separated from the town by extensive bush, and indeed until well into the nineteen hundreds this was always called the 'Back Beach' and was reached by a footway of a few planks placed end-to-end from the corner of West Street and Point Road.

Where Barnes and McFies Arcade now is, a stream of water bordered by bulrushes (and frogs) and spanned by a foot-bridge for pedestrians, ran across West Street and down to the bay. The only hospital in the town was the gaol hospital in the old 'tronk' situated about where the present gaol in Pine Terrace now is. Of this it was stated that 'the gaol accommodation is becoming a scandal and some separation of patients and prisoners, excluding lunatics, was essentially necessary, the old tronk being wholly inadequate for both, apart from its use as a police station'. (Russell's *Old Durban*.)

*Reprinted from South African Medical Congress Brochure, 1946.

There seems to be some doubt whether this hospital was used for patients other than prisoners.

The First Government Hospital

It was in a township such as this, then, that Lieut. Governor Scott suggested a Government hospital. In a despatch to the Rt. Honourable Lord Stanley, Minister for the Colonies, dated 31 July 1858, he wrote: 'I now propose to erect a hospital at D'Urban at a cost of about £800. The hospital will be a Native hospital, but, as there is no other building of the kind at D'Urban, it will be open for the White colonists while the accommodation will suffice for both'... it 'will require a small annual grant for a few years for the salary of a matron and male attendant, for the purchase of medicines and a small increase to the Government allowance now paid to the district surgeon: but I have every confidence that after the lapse of a short time these institutions' (that is, the hospitals at Pietermaritzburg and Durban) 'will become self-supporting'. Lt. Governor Scott's optimism is charming. He soon found out, as so many after him have done, that architects' and builders' estimates are rarely below the actual cost, and 5 months later he wrote to the Rt. Hon. Sir E. B. Lytton regretting 'to find that the Durban Hospital will cost £1,697 8s. 9d.'

As to its 'soon becoming self-supporting' he was even further from the mark; it never was so and now the estimate of its upkeep (or rather of its successor at Addington) for 1946 amounts to £295,127. 'As a temporary measure pending erection of a proper hospital and as a result of endless representations and complaints, the Government engaged the well-built brick residence of Mr. James McKnight in St. Georges Street for the use of the sick.'

However, in 1859 the plans and estimates were passed and in 1861 the building was completed; the *Natal Mercury* of 11 April 1861 reporting that 'the hospital under the able architectural superintendence of R. S. Upton Esq., is finished almost to the wall plates. It is one of the most considerable buildings in the town'.

This building was of brick, iron-roofed, and contained

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2 wards. It was situated on an erf extending from Smith Street to the bayside, the exact site being where the Law Courts now are. In 1904 the original buildings were still intact having been added to and used, after removal of the hospital to Addington, as the Boy's High School. On the other end of the erf near Smith Street a Boy's Primary School was built and subsequently used as the police headquarters. Even in 1945 there existed between the Law Courts and the CID headquarters an old brick room which was probably a hospital ward but used by the police as a billiard-room. Between the hospital and the bay there was nothing but the beach and some mangroves. The Esplanade, of course, was not built until long afterwards.

It will be noted that the hospital was primarily for Natives. This was partly because it was built with money allocated for Native purposes; but probably also because the few Europeans there were preferred to suffer their illnesses in their own homes. It is astonishing to notice the change that has occurred in public opinion since then. Even in the early years of this century it was difficult to persuade Europeans to go into hospital—major abdominal operations were often performed in private houses, on a kitchen or dining-room table, because the patient flatly refused to go into hospital. Today everyone goes into hospital as a matter of course for even minor matters. And if that change has occurred among Europeans, how much more so among Natives, who, in our own lifetime, used to look upon going into hospital as almost certain death. They now flock into one non-European hospital alone in Durban at the rate of 38,000 a year, exclusive of outpatients, but including about 10 tons of babies' born there.

It is probable that the hospital on the bayside was put up quite as much for the convenience of employers who did not know what to do with their sick servants as for the convenience of the Natives themselves. At any rate, it was not much used at all for a long time; generally there were two or three patients and sometimes, for weeks together, none.

Mr. Harry Higgs, now 88, recounts that when he was a boy, somewhere in the 1870's, his brother, who was accidentally shot through the thigh, was taken into this hospital for amputation of his leg and died there. There was only one other European patient in the hospital, and only one nurse—who was rarely sober. Being turned out of the operating theatre by the surgeon, Mr. Higgs watched the operation through a window. Incidentally, it may be mentioned that when the foundations of the new Law Courts were being dug in 1909 on this old hospital site, the bones of an amputated leg were exhumed.

The staffing was as primitive as the hospital itself: it was 17 years after the opening before any trained nurse was appointed, and then only one. At the beginning a Mr. and Mrs. Owen were appointed as male attendant and matron, respectively, at salaries of £36 a year each.

They were succeeded by Mr. and Mrs. Pike, during whose term of office the nursing of the women patients was done by a St. Helena woman who was their only assistant until, in 1875, a dispenser was added at a salary of £84 per annum. In 1878 the first professional nurse was appointed at £45 per annum.

Medical attention was given by the district surgeon Dr. Holland, and after him by Dr. W. H. Addison Snr. and his son Dr. W. H. Addison Jnr. Drs. Gordon, Taylor, Lyle, Bonner and Hyde also attended occasionally. The Addison

family then lived in Smith Street opposite the hospital, and much of the above information was obtained from them.

A Larger Hospital

With the growth of Durban and its development as a port, the work at the little bayside hospital outgrew its capacity and in the late 70's the Natal Government decided to build a new and larger hospital to hold 70 or 80 patients. The site was nearer the Point and facing the Indian Ocean. Along the whole of that front there was then no other building. It was and still is generally called the Addington Hospital, because it was in the area of the Addington Township laid out between the town of Durban and the Point by Lt. Governor Scott in 1860, the proclaiming of which caused considerable ill-feeling among the old Durban inhabitants, who objected to the establishment of a second 'town' between themselves and their port at the Point.

It is probable that this township was named by Lt. Governor Scott in honour of the Rt. Hon. Henry Addington, at one time Prime Minister of Great Britain (1801). It was not, however, a very great compliment to him. As late as 1893 this so-called township was just bush-covered land from the ocean beach right across almost to the bayside, with the exception of Point Road which itself was just a track with a narrow hardened strip in the centre. Incidentally, how many people know that the official name of Point Road is Scott Street and is so marked on the large-scale borough maps?

Dr. W. H. Addison Jnr. (1853-1939) used to tell how he and some boy friends, exploring in the bush, found the skeleton of an elephant just about where the Addington Hospital now stands.

The new hospital at Addington which superseded the old bayside hospital was completed in 1879 at a cost of £16,000. Subsequent additions in the form of nursing quarters, operating theatres, staff's quarters, laundries, etc., brought the cost of the building up to £40,000 by 1919 and to £500,000 by 1945. During the same time the bedding accommodation has grown from 70 to about 700 in spite of the removal of all Native and Indian patients to an entirely new and separate hospital—itself considerably larger than 'Addington'.

The Addington Hospital (we will call it that to distinguish it from its predecessor on the bayside, though its correct name is 'Natal Government Hospital') was taken over immediately after its opening by the military authorities, who used it as a hospital for the sick and wounded of the Zulu War. At the conclusion of hostilities the hospital was handed back to the civil authorities and a Mr. Barnes was appointed superintendent. There was no resident medical staff, but the district surgeon visited the hospital and Dr. W. H. Addison Jnr. did what operative work there was. It was not until 1890 that a resident house surgeon was appointed, and Sir Michael Gallway (Chief Justice and at times Deputy Governor of Natal) said that the position as regards operative work must be regularized. He then decided that, since Dr. Addison had so far been doing it on a voluntary basis, he should in future do it on a fixed basis, *viz.* a fee of one guinea for every operation requiring an anaesthetic given in the hospital, whether he gave it himself or whether he deputed it to the house surgeon or others; but he had to be responsible. At first this amounted to only a few guineas a month but, as the number of operations increased, Dr. Addison, not wishing to 'kill the goose that laid the golden egg', wisely took care

never to let his monthly accounts on this score amount higher than about 30 guineas a month. This arrangement fell into abeyance in afteryears as other competent surgeons became associated with the hospital, but it was never annulled and, shortly before his death in 1939 (aged 86), Dr. Addison used to chuckle when he reckoned that if he claimed all arrears under this agreement he would seriously embarrass the Province. Operations had by then mounted up to about 4,000 a year! In 1891 Dr. G. C. Henderson, of Eshewe, was appointed surgeon superintendent and was followed by Dr. J. Hamilton Balfe as medical superintendent in 1898 and Dr. Stewart in 1920. It was during Dr. Stewart's term of office in 1926 that a full visiting staff of physicians, surgeons and other specialists was introduced. Until then all the operative and other work of the hospital had been done by the medical superintendent himself and his resident assistants, mostly newly-qualified men, aided by occasional help from outside practitioners: Drs. Addison and Birtwell (district surgeons) and, at a slightly later date, especially by Dr. Stewart Wilson.

The appointment of a full visiting staff was a very great step forward towards increased efficiency and also in gaining public confidence in the hospital.

The Children's Hospital

The year 1931 was marked by the opening of a very fine children's hospital directly facing the beach. Though this hospital is for administrative purposes part of Addington Hospital and on the adjoining site, it differed from the rest of the hospital in that it was instigated and paid for by public voluntary contributions to the extent of £23,000 collected by Mrs. Siedle, the Provincial Administration and the Town Council each adding £14,000.

Other Changes

Early in the 1930's the work of the hospital had grown so greatly that it became necessary to remove all the non-European patients to a new hospital erected for the purpose

at Congella, the King Edward VIII non-European Hospital, which has more beds (1,100) than Addington and yet the hospital has always been over-crowded. In 1945 the Addington Hospitals admitted about 14,000 inpatients a year and about 190,000 outpatient consultations were held. The medical staff, visiting and resident, numbered nearly 60 and the nursing staff numbered 360, besides 120 other members of the European staff.

Dr. Stewart was succeeded as medical superintendent by Dr. Stevenson, and he was succeeded by Dr. Skaife.

The Natal Government Hospitals in Durban have never been charitable institutions supported by voluntary contributions as are most of those in the Union of South Africa and Great Britain. They are State institutions, just as are the schools, gaols or mental hospitals, and are maintained by the State—formerly, in Crown Colony days, by the Imperial Government, later by the Natal Government and now, since the Act of Union, by the Natal Provincial Administration. With two notable exceptions voluntary contributions have never provided a considerable part of the cost either of building or maintaining these hospitals; the one great exception being the gift of the public towards building and equipping the children's hospital already alluded to, and the other later generous bequest of £22,000, by a Mr. Bussey who died in England in the 1930's, which is to be used to build a recreation and educational block for nurses.

Taken all round, the history of the Government hospitals in Durban shows an extraordinarily rapid growth from small beginnings and has established a record of which Natal may well be proud.*

*Dr. J. V. Tanchel, the present Medical Superintendent, has kindly supplied the following information:

In 1960, Addington Hospital admitted 20,874 inpatients and there were 356,860 outpatient attendances.

The medical staff (visiting and resident) now totals 110, nursing 720, and medical auxiliaries 53.

ACUTE ASEPTIC MENINGITIS IN CHILDREN

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J. H. CLYDE, M.B., B.CH., D.C.H.

Addington Children's Hospital, Durban

As one of the acute medical emergencies demanding prompt diagnosis and effective treatment, purulent meningitis has received its fair share of attention, and practitioners are generally alert to this condition. Delay in diagnosis is still, however, responsible for an appreciable proportion of poor results, and the optimum therapy for each particular type is by no means decided. These problems have been discussed recently in this *Journal* by Esrachowitz¹ and Geefhuysen², and it is not our intention to review them.

In contrast to the purulent forms, aseptic meningitis has received little mention in this country. Bayer and Gear³ reported on 100 cases in 1952. Smaller series associated with specific agents have been reported subsequently — 5 from Salisbury, Rhodesia, due to a Coxsackie B virus;⁴ an outbreak of 58 cases associated with ECHO virus type 4;⁵ 5 cases due to leptospira canicola;⁶ and 8 cases due to ECHO virus type 9.⁷ The condition was reviewed by one of us in 1959.⁸

During the years 1953 - 1960 inclusive, 161 patients with acute meningitis were admitted to the Addington Children's Hospital. Of these, 73 were of proved or presumed bacterial origin, and the remaining 88 were of the aseptic variety. (Cases of tuberculous meningitis have been excluded.) This means that 55% of cases of acute meningitis admitted to this hospital are of non-bacterial origin, and it is obviously of major importance to differentiate these cases from those of bacterial origin. Although in the majority of cases such differentiation is not difficult, in some 15% it may be impossible (even after watching their subsequent course), to say categorically into which class they fall.

Annual Incidence

The epidemic nature of outbreaks of aseptic meningitis is well recognized and is illustrated by the annual incidence shown in Table I.

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TABLE I. ANNUAL INCIDENCE OF ASEPTIC MENINGITIS

Condition	Year							
	1953	1954	1955	1956	1957	1958	1959	1960
Cases of aseptic Meningitis	3	5	8	18	23	18	6	7
Cases of polio-myelitis	4	70	65	79	113	10	23	6

The high incidence in the years 1956 - 1958 coincided with epidemics elsewhere.

For interest the poliomyelitis notifications are included in this table. It will be seen that, although in some years a high incidence of poliomyelitis coincided with a high incidence of aseptic meningitis (e.g. 1956, 1957), and some overlap of these cases in both directions almost certainly occurred, in other years there was a high incidence of poliomyelitis with little 'non-polio' aseptic meningitis (e.g. 1954, 1955) and vice versa (1958). We are, at present, (early 1961) experiencing a minor epidemic of aseptic meningitis in spite of an almost complete absence of poliomyelitis. There is little doubt that the vast majority of cases of aseptic meningitis occurring in this area have been due to viral infections other than poliomyelitis.

Seasonal Incidence

Whereas the bacterial forms of meningitis occur throughout the year, with perhaps some slight predilection for the colder months, aseptic meningitis of viral aetiology occurs pre-

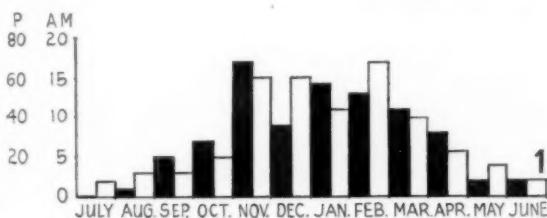


Fig. 1. Monthly incidence of aseptic meningitis (black) and poliomyelitis (white) over 8 years (1953-1960). A M = aseptic meningitis; P = poliomyelitis.

dominantly during the summer. This is illustrated in this series by Fig. 1, which also shows (for comparison) the monthly incidence of poliomyelitis in Europeans in Durban over the same 8-year period. It will be seen that the majority of cases (in fact 73%) occurred in the months November to March. The chances of a case of acute meningitis occurring during these months being due to bacterial agents are only 18%, whereas over the rest of the year the chances are 71%. This is a striking difference.

Age Distribution

The age distribution in this series of aseptic meningitis is shown in Table II and, for comparison, the bacterial cases are depicted in the same table.

It will be noted that aseptic meningitis is relatively uncommon under the age of 1 year, only 12.5% of cases falling into this age group. It is interesting to contrast this with the age distribution of the various forms of pyogenic meningitis. The higher incidence of pyogenic forms in the younger age groups is evident. We have no experience of aseptic meningitis in persons over the age of 13 years, but the impression

TABLE II. AGE DISTRIBUTION OF VARIOUS FORMS OF MENINGITIS

Condition	Age group				
	< 6 Mo.	1 Yr.	5 Yrs.	13 Yrs.	Total
Aseptic meningitis	8	3	36	41	88
Meningococcal	5	5	6	2	18
<i>H. influenzae</i>	1	3	10	0	14
Pneumococcal	0	4	6	3	13
Unidentified	11	3	6	5	25
Total septic cases*	17	15	28	10	70

* Excluding one case each due to staphylococcus, *B. coli*, and enterococcus.

gained from colleagues is that it is not nearly as common as in younger children.

Race

This study is confined to European children and figures are not available for other races. Aseptic meningitis appears, however, to be uncommon in the Coloured community in Durban and rare in Africans and Indians.

Sex

Of the 88 cases 56 (63%) occurred in males and 32 (37%) in females. A similar high incidence in males was found in the septic cases — 45 males (64%) and 25 females (36%). We have no explanation to offer for this male predominance.

Presenting Symptoms

The incidence of the major presenting symptoms as seen in this series is shown in Table III.

TABLE III. PRESENTING SYMPTOMS IN ASEPTIC MENINGITIS

Symptom	No. of cases	%
Fever	78	89
Vomiting	61	69
Headache	59	67
Irritability	10	11
Convulsions	9	10
Muscular pains	8	9
Photophobia	4	5
Drowsiness	3	3
Sore throat	2	2
Rash	2	2

Fever, vomiting, and headache are by far the commonest symptoms encountered. Rather remarkable is the relatively high incidence of convulsions (9 cases). These were not confined to the lower age groups (only 3 of these children being under 3 years of age), nor were they always associated with high fever. Muscular pains affecting either the limbs or the abdominal muscles were complained of in 8 cases. The low incidence of skin rashes would seem to indicate that ECHO types 9 and 16 viruses were not common causative agents in this series, because in outbreaks due to these viruses a rash has been reported in from 18% to 60% of cases.

Symptoms had been present on admission for variable intervals from 12 hours to 7 days. The mean period was 2.3 days, which is almost identical with the mean for the septic cases, which was 2.4 days. One might have imagined that this period would be shorter for the septic group where symptoms are usually more dramatic.

Presenting Signs

Neck stiffness, usually associated with back stiffness, was the most frequently encountered sign, being present in 45 cases (51%). A positive Kernig's sign proved much less reliable and was found in only 19 cases (22%). Where the fontanelle was still open, increased tension was noted in 6 cases. In almost half the cases there were no signs apart from fever, and lumbar punctures were performed on the history alone. This is the type of case which is easily mistaken for influenza.

CSF Findings

1. *Cells.* All cases except 2 had an abnormal cellular content of the CSF at the initial lumbar puncture. The number of polymorphs ranged from 0 to 1,035 per c.mm., with a mean of 93. The lymphocytes ranged from 1 to 960 per c.mm., with a mean of 92. The distribution of the cell counts in 5 groups is shown in Table IV.

TABLE IV. CSF-CELL COUNTS IN ASEPTIC MENINGITIS

	Cells / c.mm.				
	0 - 10	11 - 50	51 - 100	101 - 200	>200
Polymorphs (No. of cases)	29	20	16	10	13
Lymphocytes (No. of cases)	19	36	12	9	12

Whereas only 13 cases (15%) had polymorph counts of over 200 per c.mm., in the septic group 77% of cases had polymorph counts in this range. Nevertheless, there is considerable overlap. When the polymorphs number over 500 per c.mm., aseptic meningitis is unlikely, and only 1 of our cases exceeded this figure. Counts of 5,000 per c.mm. and over have, however, been recorded.

2. *Protein.* The protein content of the initial CSF ranged from 10 to 90 mg. per 100 ml. with a mean of 47 mg. per 100 ml. It exceeded 40 mg. per 100 ml. in 26 cases (30%). In no less than 12 of the remaining cases the protein content was exactly 40 mg. per 100 ml., which some would regard as slightly raised in a child. In septic meningitis the protein is generally much higher, but in 14% of our cases it was below 40 mg. per 100 ml. at the initial lumbar puncture. Only very rarely does the protein rise above 100 mg. per 100 ml. in aseptic meningitis.

The globulin was raised in 30 of our aseptic cases (34%).

3. *Chloride.* This estimation does not appear to be of any diagnostic or prognostic value, the figures in this series ranging from 657 to 761 mg. per 100 ml.

4. *Sugar.* A low CSF sugar content is usually associated with tuberculous or septic meningitis or hypoglycaemia. In only 2 of our cases of aseptic meningitis was it below 50 mg. per 100 ml., being above this figure in the remaining 86 cases (92%). Nevertheless, in our septic cases the initial CSF sugar content was normal in 56%. It would seem, therefore, that the CSF-sugar level is not necessarily a reliable diagnostic sign.

Blood Leucocyte Count

This was recorded in only 44 cases. In these the total white-cell count ranged from 5,000 to 15,000 per c.mm. with

a mean of 10,000. In the septic cases the mean was 17,000. A polymorphonuclear leucocytosis is of considerable value in differentiating the septic cases.

Duration of Illness

The persistence of symptoms was very variable, from 1 to 14 days, although most cases improved rapidly. The mean duration of fever in hospital was 3½ days. The CSF remained abnormal for up to 2 months after the onset of the illness, and was still abnormal 1 week after admission to hospital in nearly half (47%) of the cases.

Virus Studies

There is, unfortunately, no virus laboratory in Natal. We were, nevertheless, able to have virus studies performed on 45 of our 88 cases.

Specimens of stool and CSF, and occasionally throat washings, were cultured for virus, and serum examined on admission and 10 days later for the presence of antibodies. (These investigations were performed almost entirely by the Poliomyelitis Research Foundation, Johannesburg, but a few were undertaken by the Union Health Department Laboratory in Durban during the short time that a virological department was in existence).

Four cases were clinically ascribed to mumps infection, on the basis either of parotid involvement or of family history, and in 3 of these the mumps complement-fixation test was positive.

Poliomyelitis virus type I was isolated in the stools of 4 patients — 1 in 1955, 1 in 1956 and 2 in 1957. None of these cases showed paresis.

Coxsackie B virus was isolated in only 1 case and in 1 other case an, as yet, unidentified enterovirus was cultured from the stool.

ECHO virus type 9 was isolated from the CSF of 2 patients (sisters).

Thus, in only 25% of the cases examined was the aetiology confirmed or revealed by virological studies. In 87% of the total cases the aetiology remained undetermined.

TREATMENT

There is no specific therapy for viral meningitis, and antibiotics are useless and should be avoided. However, where there is some doubt whether a particular case is, in fact, a viral meningitis, the child must, of course, be given the benefit of the doubt and treated accordingly. This problem is more liable to arise with the sporadic out-of-season case of viral meningitis than during an epidemic, when diagnosis is usually easy. The drug of choice in this series has been aspirin, given to relieve headache and to control the pyrexia. Frequently lumbar puncture was found to be of definite therapeutic value in the almost immediate relief of neck and back stiffness and headache.

Confinement to bed until the CSF has returned to normal is unnecessary provided the child is symptom-free. As mentioned previously, cells may persist in the CSF for many weeks after the symptoms have disappeared, and several of the children in this series returned to school without any ill-effects, although their spinal fluids still contained cells.

There are, of course, non-viral forms of aseptic meningitis which require specific treatment, but we have not encountered any such cases in Durban.

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DISCUSSION

Aseptic meningitis is a syndrome of multiple and varied aetiology. This aspect has already been discussed,⁸ and we do not propose to repeat it here. The majority of cases are, however, due to viral agents, and it might be preferable, when discussing this group, to label it 'meningitis of viral origin'.⁹

In recent years advances in laboratory techniques have shed considerable light on the aetiology of the condition. In one large American series of 430 cases, for example, the aetiology was established in 71%.¹⁰ The commonest agent encountered was the Coxsackie B group of viruses (18%). Mumps accounted for 16%, ECHO viruses for 12%, and poliomyelitis viruses for 9%. A further 9% were due to lymphocytic choriomeningitis, and 4% to leptospirosis. In the face of such figures our poor virus-recovery rate merely serves to emphasize the need for suitable facilities in Natal.

The clinical picture as seen in this series conforms to that reported by others except in the incidence of convulsions. These are usually associated, particularly in the older child, with more serious conditions, and previously such cases were labelled acute encephalitis. However, the other clinical features in these cases with convulsions leave little doubt that they were, in fact, examples of viral meningitis. They all recovered rapidly and completely.

The clinical diagnosis of aseptic meningitis is usually not difficult, particularly during an epidemic, although it is probable that quite a number of mild cases are labelled influenza with no harm to the children concerned.

It is a common misconception that the lymphocytes exceed the polymorphs in the CSF in aseptic meningitis. This is not so in the early stages of the infection, and in 47% of our cases the polymorphs were in excess of the lymphocytes. Later a lymphocytic swing is expected. When the polymorph count is relatively high the question of septic meningitis arises; and even at lower figures this has to be considered. We have, for example, encountered proved meningococcal meningitis with only 2 polymorphs, and pneumococcal meningitis with only 20 polymorphs and 51 lymphocytes per c.mm. in the CSF. The finding of an organism, of course, abolishes all doubt, but in 25% of our septic cases no organism was found. This high figure is partly accounted for by treatment having been initiated before admission to hospital, which adds considerably to the difficulty of diagnosis, and possibly also to the inclusion of some cases of aseptic meningitis which, for the sake of safety, received treatment. Others, e.g. Smith,¹¹ have reported a similar high figure for this group of unproved bacterial meningitis. It is obviously better to err on the side of safety and to treat when in doubt, but the infliction of a course of unpleasant and potentially dangerous therapy on a child with a benign condition is, to say the least of it, undesirable. Our own experience indicates that increasing familiarity with aseptic meningitis enables a correct diagnosis to be made in a very high proportion of cases. For example, in 1956 we would never have left untreated a baby of 1 year presenting with a 2-hour history of fever and vomiting, and an initial CSF containing 1,035 polymorphs and 700 lymphocytes per c.mm., as was done in 1958.⁸ In the final diagnosis of cases in

which the laboratory findings are inconclusive, clinical assessment is of the utmost value.

The reassuring clinical picture is somewhat difficult to define, but in our experience the child with aseptic meningitis is just 'not as ill as his signs'. He is usually alert and aware of his surroundings in contrast to the apathy and listless irritability so often encountered in septic meningitis. Furthermore, the major symptoms and signs tend to regress much more rapidly in the aseptic cases.

Nevertheless, there remains a small percentage of cases in which there is doubt, and which, for safety, have to be treated as unidentified septic meningitis. In these the final answer is, therefore, not known. The possible, and graver, error of leaving untreated a case of bacterial meningitis has, somewhat surprisingly, not yet occurred in this hospital.

Viral meningitis, being a benign condition, requires no specific treatment. A watch has to be kept for the possible onset of paralysis in case one is dealing with poliomyelitis; and the possibility of a non-viral aetiology has always to be kept in mind, particularly in the absence of an epidemic. The question of septic meningitis has already been discussed. Tuberculous meningitis in the early stages can give rise to difficulty since the CSF findings may be very similar to those in aseptic meningitis. Leptospirosis occurs in this country⁶ and must always be considered, particularly in the presence of suggestive clinical features, such as conjunctival injection, a biphasic illness, and severe muscular pains. On rare occasions toxoplasmosis may have to be considered in the differential diagnosis.

SUMMARY

A series of cases of acute aseptic meningitis in children is presented and discussed, and the age distribution is contrasted with that of bacterial meningitis.

Study of the annual and seasonal incidence shows that in certain years the disease assumed epidemic proportions and that the majority of cases occur in the summer months.

The commonest presenting symptoms were fever, vomiting, and headache; the incidence of convulsions was higher than in other reported series.

An analysis of the CSF contents is presented and these are compared with the findings in children suffering from bacterial meningitis.

The results of limited virus studies are discussed.

We wish to record our thanks to Dr. A. Stephen, Medical Officer of Health, Durban, for supplying the poliomyelitis notification figures and to Dr. V. Tanchell, Medical Superintendent of Addington Hospital, Durban, for facilities.

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EXPERIENCES IN THE MANAGEMENT OF GASTRODUODENAL HAEMORRHAGE*

GERALD J. KANE, F.R.C.S., Durban

This paper constitutes the preliminary report and some facets of an investigation into the causes, natural history, methods and results of treatment of gastroduodenal haemorrhage as met with in the Addington Hospital, Durban. It represents a personal experience in 82 cases.

DEFINITION

Gastroduodenal haemorrhage means the vomiting and/or defaecation of blood, the source of bleeding being either in the duodenum or stomach, including the lower oesophagus. The bleeding is usually of such amount as to produce the systemic changes associated with a large haemorrhage.

Incidence of gastroduodenal haemorrhage. The white population of Durban is at present $\pm 150,000$. The number of patients with gastroduodenal haemorrhage admitted to Addington Hospital (European section) were: 122 in 1958, 133 in 1959, and 65 in the first 6 months of the year in 1960. Though initial impressions suggested a seasonal variation of the number of cases, with a maximal incidence in the winter months, our analysis of the admission on a monthly basis did not entirely support this (Fig. 1).

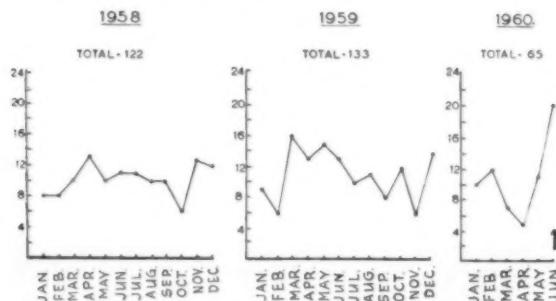


Fig. 1. The monthly admissions of cases of gastroduodenal haemorrhage at Addington Hospital, Durban.

FACTORS PRECIPITATING HAEMORRHAGE

The purposeful direct questioning of patients on the ingestion of drugs, e.g. phenylbutazone, cortisone, anticoagulant drugs (in particular acetylsalicylic acid), showed that many people were taking these drugs. This applies in particular to the 40+ age group and the ingestion of acetylsalicylic acid. In this regard we record the conclusions of Avery Jones *et al.*¹ that aspirin plays a definite part in precipitating gastroduodenal bleeding, confirming the previous studies of Muir and Cossar.² The pharmaceutical claims for soluble aspirin as either sodium acetyl salicylate or calcium acetyl salicylate must be critically considered. Both these salts may be soluble in water as claimed, but in hydrochloric acid and gastric juice they are precipitated as the crystalline acetylsalicylic acid.

* Paper presented at the Second Congress of the Association of Surgeons (M.A.S.A.), Durban, 17-20 September 1960.

DIAGNOSIS OF THE SOURCE OF THE HAEMORRHAGE

An attempt to diagnose the source of bleeding is made as soon as possible and preferably on *clinical grounds* without exhausting special investigations. Infrequently, urgent barium examination in the bleeding phase has been undertaken, and Hampton's³ 'non-touch technique' has been used. As the number of patients so examined have been few, the efficacy or safety of the procedure cannot be commented upon. We have not used the bedside barium examination using standard portable apparatus as reported by Cantwell.⁴ This author states that the diagnosis has been accurate, as confirmed later in 82% of 200 cases. Furthermore, the procedure is stated to be non-disturbing and has been entirely free of complications. As radiology is unlikely to influence the selection of cases for urgent operation, we have not considered this procedure as essential and have reserved it for the investigation of those patients in whom the bleeding has ceased.

Gastroscopy has not been employed.

In arriving at a *clinical* diagnosis of the cause of the haemorrhage, we therefore consider the following:

1. A Radiologically-established Diagnosis of Peptic Ulceration (Currently or Previously)

Patients' affirmation that they have a peptic ulcer must be supported by radiological evidence of ulcer. Many have had a clinical diagnosis of ulcer made that was never supported by further investigations, and cannot therefore be considered diagnostically proved. Furthermore, we have been astounded by the number who have bled from a source other than the proved ulcer.

2. A History of Dyspepsia

Most patients over the age of 45 admitted to some form of dyspepsia and this was also a frequent feature in the younger patients with a history of alcoholism. The presence of indigestion as a symptom could therefore not in any way serve to establish the presence of peptic ulceration, and was always found in gastritis from alcohol or aspirin.

3. The Mode of Onset of Bleeding

To this we have attached great significance.

(i) The onset of a large, painless haemorrhage, particularly in a young patient and in the absence of any previous dyspeptic history, should suggest an ulcerating benign tumour of the stomach. Fig. 2 shows such a large leiomyoma of the stomach.

Case 1. Mrs. M, 42 years, April 1959. Sudden, large silent bleed of bright blood. No previous history of bleeding or dyspepsia. Bleeding stopped after 24 hours. Barium meal revealed a tumour on greater curve of stomach with ulcer on apex. Pre-operative diagnosis—leiomyoma.

Operation: (Mr. A. Copley) Gastrotomy and sleeve resection of stomach including tumour undertaken. Histology. Argentaffinoma.

(ii) Repeated bloodless vomiting over a short time, if followed by a sudden bloody emesis, is diagnostic of the

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Fig. 2. X-ray of a leiomyoma of the stomach.

Mallory-Weiss syndrome⁵ in which the gastro-oesophageal mucosa sustains a fissured tear from the effort of vomiting.

Case 2. Mr. P., 38 years, 17 April 1959. Arrested for insobriety. Chronic dyspeptic history. Whilst in the cells, vomited stomach contents frequently through the night, but did not bleed. 18 April 1959, sudden profuse haematemesis; bright red and altered blood. Patient admitted to Addington Hospital where transfused with 3 pints of blood. No hepatomegaly and no splenomegaly. 19 April 1959, melaena and fresh haematemesis. 2 pints of blood transfused.

21 April 1959, very large haematemesis requiring rapid transfusion—7 pints of blood: for immediate operation. Provisional diagnosis, chronic gastritis. At laparotomy there was no ulcer of stomach or duodenum. Lesser sac opened. Fresh subserous haemorrhage, extending as a flare from cardia of stomach, was noted in anterior wall. Gastrotomy performed over distance of 6 inches. Constant brisk oozing of blood seen to be rising at oesophago-gastric junction from tear in mucosa of this region. Procedure: suture of fissure from within stomach after wedge biopsy.

No further haematemesis or melaena.

4. The Volume of Blood Lost

It has often been stated that carcinoma of the stomach does not produce a haematemesis or melaena of great amount. In 2 of our patients this has not been the case. The first patient, aged 31, with subsequently proved carcinoma of the pylorus, required rapid transfusion of 2 pints of blood; a female aged 39, with carcinoma of the body of the stomach, had to be similarly transfused.

5. The Nature of the Blood Loss

Patients with bleeding varices had an acute, massive, bright-red, bloody emesis. Melaena then followed. Patients with bleeding duodenal ulcers often had both haematemesis and melaena; but often melaena alone occurred. If the haemorrhage was rapid, the blood in the rectum was bright red and unaltered.

6. Bleeding Associated with Abdominal Pain

The association of acute upper abdominal pain with haematemesis is usually considered to be indicative of haem-

morrhage plus perforation. We have not encountered such a case, but made the diagnosis in one patient who was subjected to laparotomy and gastrectomy without an evident cause of haemorrhage.

Histology of the resected stomach revealed acute gastric erosions of the type met with in 'aspirin' ulceration. On subsequent questioning the patient admitted to having ingested 4 aspirin tablets (20 gr., 1·3 G.) on an empty stomach, a few hours before onset of symptoms.

7. A Palpably Enlarged Liver

Marked liver enlargement below the costal margin occurred in 2 patients who were acknowledged alcoholics. Neither bled from oesophageal varices and indeed both had duodenal ulcers. In the first, congestive cardiac failure as a result of anaemia caused hepatomegaly, which receded on effective cardiac treatment. In the second a fatty liver was shown at autopsy.

One may be tempted to jump to the precipitate and erroneous conclusion that, because the patient is an alcoholic and because the liver is enlarged, portal hypertension is the background to the haemorrhage.

8. A Palpable Spleen

A history of chronic alcoholism cannot alone permit the apportionment of blame for the haematemesis to oesophageal varices. Chronic and acute gastritis are the more likely causes, and we are of the opinion that portal hypertension with oesophageal varices cannot be diagnosed in the absence of a palpable spleen. In those cases in which oesophageal varices have been the cause of the haemorrhage, a spleen was easily palpable.

9. Gastroduodenal Bleeding Followed by Coma

Although haematemesis may occur in the coma of uraemia, this has not been a surgical problem. Those patients who bleed first and then go into coma probably have impairment of liver function, but again we have found that in the absence of a palpable spleen a source of bleeding other than varices was present.

Case 3. Mrs. W., 45 years, 14 March 1960, admitted with melaena, in state of circulatory collapse. No haematemesis. The patient was conscious and known to be a chronic alcoholic.

A hard liver, three-fingers enlarged, was palpable, but a spleen was not felt. Six hours after admission patient went into a coma and her breath had the odour of foetor hepaticus.

Treatment failed. Autopsy showed a large bleeding duodenal ulcer.

10. External Abdominal Trauma

This was invoked, although not proved, as the cause of bleeding in one patient aged 17 who was struck a sharp blow across the upper abdomen and immediately vomited large amounts of fresh blood. Indeed, 7 pints of blood (transfused) were needed to restore circulatory equilibrium.

SELECTION OF CASES FOR EMERGENCY OPERATION

We have used as a yard-stick the expected results of treatment of haematemesis and melaena without surgery. The expected mortality in the treatment without surgery of patients younger than 45 years, is 0·5%. The expected mortality in the treatment without surgery of patients over 50 years, is 15%.*

As there are no effective means of inhibiting the bleeding without surgical aid, all patients over the age of 45 are admitted to a surgical ward and kept under most careful

observation, including gastric aspiration through a Ryle tube. In addition the physician's assessment of the patient's general state of health is obtained.

Emergency Surgery

Indications for emergency surgery, i.e. operation after restoration of blood pressure to the systolic of 100 mm. Hg with rapid transfusion of blood are as follows:

1. *Patients over 45 years of age, (group A) with:*

(a) Haemorrhage for a period longer than 24 hours and still actively bleeding.

(b) Haemorrhage that has temporarily stopped, but restarts.

(c) Haemorrhage plus abdominal pain that suggests perforation.

(d) Haemorrhage plus a chronic history of proved peptic ulceration.

(e) Haemorrhage and a history of previous haemorrhage.

Though the above criteria are used to decide on operation, we are naturally guided by the patient's associated biological and clinical state. In the aged or decrepit elderly, i.e. in patients of 70 years or more, we have tended to be more elastic in our absolute criteria for operation and often have risked conservative treatment. However, age alone is no contra-indication to surgery. Our oldest patient successfully submitted to emergency gastrectomy for haematemesis due to a chronic posterior duodenal ulcer, was 84 years.

On the other hand, the following case is an example of the considered need for conservative treatment in a patient who in all other respects is suitable for classification in the surgical group.

Case 4. Mr. E. G., age 50. Admitted on 20 August 1959 with weakness, epigastric pain and melena of 5 days' duration.

There was a strong past history of alcoholism, but not indigestion.

On examination: Patient anaemic with haemoglobin of 6.5 g. per 100 ml. Pulse 100 per minute. Abdomen a little distended. A two-finger enlargement of the liver below the costal margin was palpable. Three pints of blood were slowly transfused and the patient went into acute left ventricular failure with pulmonary oedema. Treatment with digitalis and mercurial diuretics was necessary to bring him out of failure. The bleeding continued for several days, but the patient's general state could be maintained with slow transfusion of packed red cells. An electrocardiogram, done on 22 August 1959, revealed a fresh anterior infarct in the myocardium.

On X-ray, 1 October 1959, a healed duodenal ulcer with scarring of the duodenal cap was demonstrated.

2. *Patients under 45 years of age (Group B) are generally treated without operation. However, the latitude allowed in the criteria for exclusion from emergency operation in the 45+ age group has a complementary group for operative inclusion in the under-45 group. This includes:*

(a) The bleeding oesophageal varices.

(b) Continued major bleeding to third, fourth and fifth day.

(c) Continued slow bleeding as witnessed by persistent occult blood in the stool and a falling haemoglobin.

(d) Bleeding with perforation.

(e) Haemorrhage plus chronic history of proved peptic ulceration.

OPERATIVE MANAGEMENT

Patients selected for emergency surgery are operated upon under a general anaesthetic. We have not had recourse to the use of local anaesthesia as practised by Tanner.⁷ The abdomen

is opened through a left upper paramedian incision. We prefer the left-sided rather than the right-sided approach, since it affords better access to the cardia and fundus of the stomach, both of which have frequently been found to be the sites of origin of haemorrhage.

The Operative Routine

1. Careful palpation and inspection of the anterior gastric and duodenal walls (first and second part) and palpation of the posterior wall through the duodenum for evidence of induration and ulceration. The finding of a duodenal ulcer must not be taken as the established source of the bleeding. Up to 15% of duodenal ulcers are associated with gastric ulcers (Maingot⁸).

Case 5. Mr. C. Age 61. Clerk. Admitted to Addington Hospital in May 1960. Admitted history of duodenal ulcer of 15 years. Large haematemesis which required transfusion of 3 pints of blood. The haemoglobin and blood pressure were satisfactory until 10 May 1960 when a further acute haematemesis occurred. The patient was prepared for emergency operation with the following findings:

There was a chronic duodenal ulcer present on the first part of the duodenum.

Palpation of the anterior gastric wall revealed a hard thickening on the proximal portion of the lesser curvature. A 4-inch gastrotomy incision was then made through the anterior gastric wall. The stomach contained much fresh blood and blood clots which were sucked out. A finger in the stomach, introduced through the pylorus into the duodenum, was shown to be free of fresh blood; a finger introduced proximally in the stomach fell into a sharp, punched-out, deep, benign ulcer crater high on the lesser curvature. In the centre of this crater was a vibrissa-like artery from which the blood was spurting.

2. The gastrocolic omentum is divided allowing access to the lesser sac. The posterior surface of the stomach is now inspected and must be freely mobile on its omental bursa. The presence of adhesions between the posterior stomach wall and posterior peritoneum of the lesser sac is considered pathological and frequently the result of a posterior gastric ulcer, the presence of which may not otherwise be seen or felt. In 3 patients we have been led to a chronic posterior gastric ulcer, each the source of haematemesis, by observing the posterior fixity of the stomach.

3. The presence of a fixed hiatus hernia is sought for. To date, none of our operated cases have revealed this source of bleeding. We note with great interest, however, the large number encountered by Marchand.⁹ We accept the possibility of not having detected the actual presence of a bleeding hiatus hernia, though it might have been present. In this respect, we should like to mention our experience in routine palpation in all abdominal operations of the oesophageal hiatus which allows the admission of 2 to 3 fingers in nearly all patients over the age of 55.

4. The spleen is demonstrated and its size noted.

5. The mesenteric and gastro-epiploic veins are inspected for congestion as in portal hypertension. These may possibly be collapsed if shock is still a feature.

6. Whether an ulcer is present or not we have made a habit of opening the stomach in every case through a 3-4 inch anterior gastrotomy incision, in order to ensure that the bleeding is indeed coming from the pathological site visualized or palpated from the exterior of the stomach, and for examination of its interior where no cause of bleeding can be determined by examining its exterior. The interior aspect of the stomach is carefully visualized and palpated. A finger

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is introduced into the duodenum, then up to the oesophagus. We presume that peptic ulceration of the oesophagus should be felt. Collapsed varices will not be palpable, but bleeding from within the lower oesophagus might be demonstrated on the gloved finger. We have learned to palpate the cardia especially well, because on two occasions we missed a carcinoma at this site. The visualization and palpation of the interior of the stomach has at times revealed unsuspected causes of haemorrhage, e.g. the Mallory-Weiss syndrome cited, and bleeding gastric ulcer in the presence of duodenal ulcer. One patient had a diffuse petechial haemorrhagic state of the gastric mucosa. We have not found this gastroscopy an added operative or postoperative hazard.

7. The problem of a 'negative' gastric and duodenal examination including gastroscopy. This occurred in just more than half the cases operated upon and is the surgeon's dilemma.

Guided by the experience of the Mayo Clinic¹⁰ we have performed subtotal gastrectomy in the absence of overt pathology; of these one patient continued bleeding for 30 hours after subtotal gastrectomy, another bled again on the 7th postoperative day, but these survived. A third patient had a fatal haemorrhage on the third postoperative day. Nevertheless, the figures from the Mayo Clinic authority are significant.

Forty-eight patients were operated upon—the stomach and duodenum were opened, but no abnormality detected.

In 28 no gastrectomy was performed; two out of three had a recurrent haemorrhage. In 20 gastrectomy was performed, and in these 1 in 10 had recurrent haemorrhage. Eight showed an ulcer on histological examination.

THE DEFINITIVE OPERATIVE PROCEDURE USED

Apart from gastroscopy no single standard procedure is recommended; each condition being treated on its own merits. Gastrectomy has been performed for bleeding duodenal ulcer in all cases but one. This exception was a patient with a carcinoma of the bladder (with pelvic secondaries), who also presented with a history of chronic duodenal ulceration and haematemesis which would not stop. Duodenotomy revealed the bleeding posterior ulcer. Haemostasis was achieved by under-running the ulcer with suture. For gastric ulcer we have performed either wedge resection of the ulcer or gastrectomy, depending on the site of the ulcer and the condition of the patient. Where the ulcer was so high on the lesser curve as to make wedge excision hazardous and near-total gastrectomy unadvisable, we have occluded the ulcer by suture from the interior of the stomach. For the

benign tumour, we have performed sleeve resections including the tumour growths. In cases with a tumour on a pedicle we have transected the stalk only. For carcinoma at the pylorus subtotal gastrectomy has been done. In the case of Mallory-Weiss syndrome, the tear in the gastric mucosa was sutured from within the stomach. In this case, as in that of the high gastric ulcer, we have not hesitated to use silk suture and trust that we have not provided a nidus for further ulceration.

FOLLOW-UP

In 3 years we have had no repeat haematemesis after operation. Further observation is obviously needed. Two problems remain a cause for anxiety with regard to the method of their surgical management. These are:

1. Bleeding oesophageal varices in portal hypertension.
2. Bleeding from carcinoma near the oesophago-gastric junction.

In the former we are employing Tanner's method of porto-azygos disconnection with gastric transection. We have not found a suitable form of treatment for the latter.

SUMMARY

1. The incidence of gastroduodenal haemorrhage in a general hospital (Addington), Durban, is shown and some precipitating factors are mentioned.
2. The claims for soluble aspirin are contested.
3. The diagnosis on clinical grounds of the source of bleeding is considered.
4. The criteria for emergency operation are discussed, together with the operative procedure.

5. Gastrotomy is considered an essential procedure in every single case before embarking on the remedial operation. For his keen stimulus and constant advice I am indebted to Mr. Arthur Copley, F.R.C.S.

For his limitless facilities I am grateful to the Medical Superintendent and Senior Staff at Addington Hospital. My appreciation, too, to the Department of Chemistry, Natal Technical College, under the direction of Mr. Mathew for experiments of the effect of gastric juice and hydrochloric acid on so-called 'soluble aspirin'.

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THE SOUTH AFRICAN MEDICAL CONGRESS, 24 - 30 SEPTEMBER 1961, CAPE TOWN

HOTEL ACCOMMODATION

The Forty-third Medical Congress of the Medical Association of South Africa will be held in Cape Town from 24 to 30 September 1961. Information regarding the Congress is published at regular intervals in the *Journal*. Although it is still relatively early, members who intend coming to Congress are requested to send in their Intention Forms as soon as possible.

Prospective visitors to the Congress are also requested to bear in mind that *hotel accommodation in Cape Town is somewhat limited* and that they should make the necessary reservations well

in advance of Congress. The Travel Bureau of the South African Railways has been appointed the official agent in this connection. Members are requested to contact their local agents who have been extensively circularized in this respect. In the small platteland towns the nearest stationmaster will handle the matter.

Make your reservations now in order to avoid disappointment. In the event of any difficulty, please write to Dr. J. C. Coetzee, Convener, Accommodation Sub-Committee, 43rd South African Medical Congress, P.O. Box 643, Cape Town.

THE ROAD ACCIDENT 'EPIDEMIC' *

R. MUNDY, President, Natal Coastal Branch (M.A.S.A.), 1960

The title of my address is 'the epidemic of 1961'—an epidemic which this year in South Africa will show a mortality of at least 3,000, and a morbidity of over 36,000.

One morning last year I was called urgently to see a boy of 7 who had been knocked down by a car. He died as I was examining him. That evening I was asked to see a friend who was badly bruised. His story was that 2 hours earlier he and his wife were driving down Sydenham Road to go to the Alhambra when a car, without lights, came over to his side of the road and hit him head on. His wife was flung out of the car and she died on her way to hospital.

Shortly after this tragic day, a young woman from the Transvaal came to see me. She had been in a car accident with her husband and only daughter, 3 weeks before. She was the sole survivor of that accident. Incidentally she was 6 months pregnant and had come to ask me for the name of an obstetrician.

These three cases coming in such quick succession made me realize more than ever before what a problem road accidents are becoming, and provided the stimulus to choose this subject for my address.

Early Days

The first motor car ever brought into this country was a 1½ h.p. Benz. It was actually introduced into the Transvaal in December 1896 by two Pretoria men, J. P. Hess and A. E. Reno. They demonstrated it in Johannesburg and then on 5 January 1897 it was shown in Pretoria. President Kruger was present at the demonstration and expressed a favourable opinion with regard to the introduction of automobiles. He also stated that no special Act of Parliament would be necessary to render it possible for such vehicles to come into general use.

In 1898 the second motor car, a Royal Enfield Quad, arrived in Cape Town. It was offered for sale at £110 and was immediately bought by a Mr. (later Sir) Alfred Hennessy. He took delivery outside Garlicks at the bottom of St. George's Street, Cape Town. On his first run he lost control of the car and ran straight into the crowd. Fortunately, none of the injuries were serious, but this incident in 1898 must be considered to have been the first road accident in this country. In 1903 in Cape Town, at a speed contest, an Oldsmobile lost a front wheel and the driver fell out and broke his arm. This broken arm, as far as I can ascertain, was the first broken limb following a car accident in this country.

The first car seen in Durban was in 1902, a Benz owned by Mr. Geo Chapart who, incidentally, at the ripe old age of 84, is still in the motor business. He owns a garage in Krugersdorp. In 1905 he opened Durban's first garage and also introduced the first motor-bicycle and first Ford motor car to this country.

Durban's first woman driver was a Miss Hilda Poynton, now Mrs. Frank Acutt. She made her bow in 1906. The family chauffeur had left overnight to go to the Bambata rebellion, and the next morning she had no option but to drive her father to town. Later in the year driving certificates were issued to all Durban drivers and she was given certificate No. 1.

I should like to stress that, though road accidents are a national problem, we as a medical profession are particularly concerned.

I have no intention of discussing the varieties and treatment of these accidents, but I should like to draw your attention to our duty as a profession regarding the need for legislative reform to reduce road accidents.

Figures issued by the Bureau of Census and Statistics show that, in this country in 1959, 2,842 people were killed and 35,831 were injured. If infections, either viral or bacterial in nature,

are a concern of ours (and they surely are and their treatment is part of our duty to the public), then I feel that the effects of the injuries and deaths produced by motor vehicles are equally our concern.

I believe that we, as a medical profession, have an urgent duty in repeatedly bringing to the attention of the authorities and the public the need for the reduction of the appalling slaughter that is constantly occurring on our roads.

Daily we as doctors see the mutilated dead in the mortuary and have to deal with the many major and minor injuries resulting from road accidents, many of which are preventable. We realize how much greater a problem it is than most illnesses.

L. G. Norman, in his Milroy lecture of 1960, speaking on 'Medical aspects of road safety', has shown that in 1957 in Great Britain deaths from road accidents exceeded, for the first time, deaths from tuberculosis of all forms.

He has shown, too, that road accidents are now the most common cause of death in male adolescents and young adults. Between the ages of 20 - 24, one third of all male deaths are caused by road accidents.

It appears to me that, unless some well-known personality is involved or there is a spate of accidents at holiday times, accidents are so common that they are no longer news.

In the past, diseases such as typhus, typhoid, and malaria were responsible for disastrous epidemics, but today they are virtually non-existent and easily prevented and cured. Even if all these advances are not entirely due to the medical profession, they are in large measure due to our efforts.

Some of these advances are directly due to medical discoveries such as antibiotics, vaccination, chemotherapy, and, with the great advances being made by research workers in virus diseases, there is good reason to believe that diseases such as influenza etc. will soon be controlled. Public-health measures have eliminated disease from dirt and filth. Our colleagues of the past forced governments to improve public health in the way of water supplies, sanitation, housing conditions, etc.

We doctors are the only people who see the dreadful injuries from road accidents with the accompanying misery and pain and suffering that the victims undergo. It is our obligation to bring this matter again and again to the attention of the authorities and, as our colleagues of the past did, force them to take action.

The report of the Bureau of Census and Statistics shows that every day there are 8 deaths in this country from motor vehicle accidents, and nearly 100 people are injured. These figures must surely call for action from our legislators. The public are, I think, inclined to accept that most of the victims of accidents are the drivers and passengers of motor vehicles, whereas the vast majority of killed and maimed persons are either cyclists or pedestrians. The accidents usually do not occur on the open roads, but in built-up areas.

To quote L. G. Norman again: In Great Britain in 1957, there were 5,550 fatal accidents. Of these, cyclists (motor and pedal) and pedestrians accounted for 4,035, or 78%.

In a recent report on accident studies in the Union of South Africa by Dr. Rigen, director of Road Research, Witwatersrand University, it has been shown that for motor cyclists the risk of death is 16 times greater than for car drivers for the same distance travelled. This is a point that could be drummed into the, as yet, unfractured skulls of boys of school-leaving age.

The late Sir Hugh Cairns pointed out that 80% of deaths in motor cyclists resulted from head injury—hence his advocating the use of safety helmets. Helmets are, however, only rarely seen here. In Britain it is estimated that 50% of the cyclists are wearing safety helmets. Professor Bauer of the Surgical Clinic at Heidelberg, West Germany, stated 'It is obvious that a safety crash helmet is an indispensable necessity.'

Causes of Road Accidents

I believe that the causes of road accidents can be divided into 2 main groups: speed, and human behaviour. By speed I mean speed in relation to risk or safety. Speed must be accepted as the main cause of accidents since it is usually only when a vehicle is in motion that it is a danger. The able driver is aware of the lethal potentialities of his vehicle and his speed varies with the

Dr. Mundy

hazards of the road, while the accident-prone driver hurtles along with selfish unconcern. Just as scientific progress cannot be halted, so motor vehicles must continue to function. Every year motor manufacturers are turning out more efficient and speedier machines, but man's reactions are unable to keep pace.

The following figures are in direct conflict with the views of some, who state that speed is of little import in road accidents:

In West Germany the increase in road accidents in 1952 over 1951 was only 35. Then the speed limit was suspended in 1953, and in this first year after the suspension the increase in road accidents rocketed up from 35 to 3,324.

In September 1957, the compulsory speed limit was re-introduced and immediately the fatality rate dropped by over 25%. In Sweden, for the last Christmas holidays, a speed limit of 50 m.p.h. was introduced. There was only one fatal accident.

Associated with this relative speed as a cause of accidents, is the behaviour of the driver—for example, bad judgment, carelessness, or even stupidity.

The vagaries of human behaviour are complex, but when some men get into the driver's seat these vagaries are multiplied, since the personalities of the drivers seem to change. So many pleasant and polite people seem to become intolerant and selfish while driving. Factors like fatigue and the abuse of alcohol are also of importance. Often pedestrians who are victims of road accidents are under the influence of alcohol. It would probably be advisable to have the blood of all seriously injured pedestrians examined as a routine. This would be of assistance in a Court of Law when a driver has to face a charge of culpable homicide.

Robert F. Borkenstein of the USA, in opening his symposium on Breath Alcohol Tests, stated that whenever alcohol and transportation meet, there is friction. He went on to say that Biblical literature describes the difficulties that Noah had in managing his Ark while saving a pair of each living species at the time of the great flood. His navigational problems were aggravated by one single mischievous microscopic hitch-hiker. This little fellow, a yeast germ, fell among Noah's grapes, resulting in wine that he found particularly inviting.

Coming to more recent times, George Stephenson, who, as you know, invented the locomotive, had something to say on this subject. He complained that the personnel operating his steam engines were being 'tanked up' on something besides the steam in their boilers. He stressed, for the first time, the accident hazard caused by engine drivers who drank.

A great deal has been written on the subject of drinking drivers, and numerous committees have reported their opinions. Criticism of the conclusions and findings of these bodies and individuals has varied, not on the effect of alcohol on driving performances but on the methods of determining whether the driver is under the influence of alcohol.

Expert opinion is in complete agreement that alcohol is a depressant—that it has in fact an anaesthetic effect on the central nervous system. It is hardly necessary to add that the popular idea that alcohol is a stimulant is erroneous. As you know, alcohol acts by depressing normal responses and replacing them by a false sense of confidence. Its maximum effect is reached in 30-60 min. Even in small doses alcohol can lead to an underestimation of mental and physical errors and an overestimation of physical and mental ability.

A Committee of the British Medical Association has recently completed its report on the relation of alcohol to road accidents. Some of their findings are well worth repeating. They state that the official returns of accidents by drivers who have taken alcohol underestimate, very considerably, the number of accidents due to this cause. The report further states that in the case of a driver, a concentration of 50 mg. of alcohol in 100 ml. of blood is the highest that can be accepted as consistent with the safety of other road users. Incidentally, 50 mg. per 100 ml. is equivalent to 2 tots of whisky or 2 pints of beer. The Committee was of the opinion that they could not conceive of any circumstances in which it could be considered safe for a person to drive a motor vehicle on the public roads, if the level of alcohol in his blood was greater than 150 mg. per 100 ml.

In Sweden, as you are all well aware, imprisonment is virtually mandatory for those drivers whose blood alcohol is over 150 mg. per 100 ml.

Yet, in this Province, over a period of 21 months, there were 658 cases of people driving under the influence of alcohol, and in

89% of the drivers the blood-alcohol level was higher than 150 mg. per 100 ml.

The Committee also felt that clinical examination in the absence of biochemical tests is neither sufficiently sensitive nor reliable enough to detect deterioration in driving performance. They believe that a substantial reduction in the number of accidents caused by alcohol has been achieved where it has been made an offence to drive a motor vehicle when the concentration of alcohol in the tissues was in excess of a certain level. These conclusions are most important coming from such an authoritative and unprejudiced body. Incidentally, this committee numbered 17 and consisted of 5 laymen and 12 doctors. Of the 12 doctors, 7 were general practitioners.

The findings of the Committee can be accepted without question; they prove beyond doubt that alcohol, carelessly taken, is the cause of a high proportion of road accidents, many of which are fatal.

I am reminded of an old Spanish proverb which is not inappropriate. It is this: 'Wine has two defects; if you add water to it you ruin it, if you don't add water it will ruin you.'

While discussing the subject of depressants, it would be as well to refer to a possible iatrogenic cause of accidents, namely, the use of certain drugs. Dr. Dickson Wright, who was with us recently, stated that one in five patients who visit the doctor in the UK is emotionally or mentally disturbed. They are given tranquilizers or barbiturates in one form or another. Do we always think of the element of danger in prescribing these drugs to a car driver?

It is the general impression that motorists are usually the victims of road accidents. The fact of the matter is that they suffer least of all. There are of course three groups of people involved in accidents, e.g. motorists, cyclists, and the pedestrians. As I have shown, it is the latter two groups that have the highest casualties. For every 100 motorists involved in an accident, only 20 suffer injury; but for every 100 cyclists or pedestrians, 60 suffer some degree of injury. Even more illuminating is the fact that for every motor car driver that is killed, nine cyclists or pedestrians are killed.

The majority of pedestrian deaths occur in the very young and very old. The children have not really reached the age of thought and reason, whereas the very old are not nimble enough to jump out of the way of the juggernauts. In regard to cyclists, the highest death rate is in the 10-15 year age group, that is the school-going age.

It appears from these figures that the motorist kills himself by travelling at an unduly high speed on open roads, while in the built-up areas his speed is sufficiently reduced for his own safety, but not for the safety of other road users. The majority of collision accidents occur in built-up areas, while non-collision accidents occur on the open road due to excessive speed and irresponsible behaviour.

I must quote Robert Bendiner here: 'The traffic engineers who plan the motorized or major part of our lives are worried and with good cause. For years they have been busy designing great highways with no bends, cross-roads, or traffic lights. And now that they have just about perfected the dream highway—what do we humans use it for? None else but to dream. With all natural hazards removed and mile after mile of beautiful road stretched out before him, a man can and often does have his foot on the gas and his head in the clouds. And if he suddenly hears a horn close to his ears, as likely as not it is Gabriel's!'

Authorities, motoring associations, and other bodies have done and are doing a great deal towards road safety. We are all aware of the time and thought that has been given and the money that has been spent on these safety measures. It is beyond question that these measures have contributed a great deal to the reduction of accidents; however, to accident-prone drivers these measures mean little.

Apart from all other causes, ignorance of the lethal qualities of the modern motor vehicle is a contributory factor in road accidents. If avoidable accidents are to be prevented, a driver must be made aware of the physical and mental reactions that come into play when confronted with an emergency. His reaction time depends on his physical and mental state. Under the best of road conditions it takes a car travelling at 50 m.p.h. about 50 yards to stop, and at 30 m.p.h. about 15 yards.

There is an ever-increasing number of motor vehicles on the

roads. The increase in registrations from 1950 to 1960 has been estimated to be more than 60%, but on examining road traffic accidents over the same period, we find that accidents causing serious injury have increased by more than 150% and fatal accidents by more than 180%. The percentage increase in fatal accidents alone is therefore three times the percentage increase in registrations.

Control

If control of the two factors I have mentioned is not adequate, the accident rate will continue to increase. Improvements in vehicles and roads, etc. are part and parcel of the march of progress, and we cannot go back to the days of the ox wagon. Neither can economic advances be stopped from spreading, so that increasing density of traffic in more built-up areas will continue.

A body called the Institute of Advanced Motorists has been formed. Its aim and purpose is to improve the standard of driving by instilling the ideas of courtesy, tolerance, and patience in drivers. It is a voluntary non-profit making organization. There is no doubt that an organization of this kind has a definite value for many of us, but the sad truth is that those who have the greatest need are those who are least likely to take advantage of this offer.

I think that control could greatly reduce the accident toll. Our own reactions at the sight of a traffic policeman are immediate—first a glance at the speedometer and then ensuring that the correct signals are given, etc.

It is our duty to the state to advise—we are not legislators who lay down laws. However, due to our efforts the state realized the necessity for taking preventive measures against outbreaks and

epidemics of certain infectious diseases. We informed the state how and why these diseases flourished, where they come from and what measures were necessary for their control. We should do the same with regard to road accidents.

Numerous suggestions for the reduction of accidents are published in the press from time to time, but the problem requires much more scientific consideration than comes from these suggestions.

If any real attempt is to be made to reduce road accidents, a very careful investigation into the speed limits that are compatible with road safety will need to be made. The limits should then be strictly imposed and enforced by an adequate controlling force, and if they are infringed, a sufficiently deterrent penalty should be imposed, without fear or favour.

CONCLUSION

I have made a broad survey of some of the causes that I think are responsible for the number of deaths and injuries that occur daily on our South African roads.

There are nearly 8,000 registered medical practitioners in South Africa. We, as persons having a particular knowledge, should keep up a campaign of propaganda against this epidemic. Our newly-formed College of General Practitioners might seriously consider giving their attention to road accidents.

In addition, it is our duty as individuals to rouse the conscience of the authorities to this holocaust. I suggest that we have no better representatives to carry out this duty than those doctors who are members of parliament. It is our sincere hope that they will present a unified front for this special and important service to the people of South Africa.

ADDINGTON HOSPITAL CENTENARY CELEBRATIONS

REFRESHER COURSE FOR NURSES

PROVISIONAL PROGRAMME

Monday 19 June 1961

8.30 a.m.	Registration of participants.
9.45 a.m.	Opening address, Dr. E. G. Malherbe, Vice-Chancellor, University of Natal. Chairman: Mrs. P. H. L. Sawers, Matron, Addington Hospital.
10.45 a.m.	Morning tea.
11.30 a.m.	Inaugural lecture. Miss L. L. Davies, Organiser of Nursing Services, Natal Provincial Administration.
2—3.30 p.m.	Visit to Blood Transfusion Services. Dr. B. G. Grobbelaar.
3.30 p.m.	Afternoon tea.
4 p.m.	Visit to Radio Therapy Department, Addington Hospital. Dr. N. Sacks.
8 p.m.	The psychiatric approach to medicine. Dr. B. Crowhurst Archer.

Tuesday 20 June 1961

9 a.m.	The treatment of peptic ulcers. Dr. B. Moshal, Physician. Mr. J. R. Boulle, Surgeon.
10.15 a.m.	Morning tea.
10.45 a.m.	Thirst and fluid balance. Mr. A. C. Copley.
11.45 a.m.	Modern drug therapy. Dr. J. A. Macfadyen.
2 p.m.	Visit to the Chest Clinic, Warwick Avenue. The modern approach to tuberculosis. Dr. B. A. Dormer.
8 p.m.	Surgery of the colon. Mr. Mannie Stein.

Wednesday 21 June 1961

9 a.m.	The problems of geriatrics and their management. Dr. N. A. Rossiter.
10.15 a.m.	Morning tea.
10.45 a.m.	Modern anaesthesiology. Professor H. Grant-Whyte.
11.45 a.m.	The surgical aspect of vascular disease. Mr. N. R. Butcher.
2 p.m.	Visit to Wentworth Hospital through the courtesy of the Medical Superintendent and the Matron.

8 p.m.	Cardiothoracic Unit. Dr. Ivan Barnat, Dr. T. G. Armstrong. Neuro-surgery Unit. Mr. M. J. Joubert. The modern treatment of cardiac disease with special reference to coronary thrombosis. Dr. Nathan Smith.
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Thursday 22 June 1961

9 a.m.	Loss of voice and defects of speech. Mr. L. Knox, Miss M. A. Macfadyen.
10.15 a.m.	Morning tea.
10.45 a.m.	Recent advances in gynaecology. Mr. Harold Renton.
11.45 a.m.	Recent advances in orthopaedic surgery. Mr. R. C. J. Hill.
1.30 p.m. (1)	Visit to the Open Air School for Handicapped Children, by courtesy of the Principal. Miss D. C. Davies.
3 p.m. (2)	Visit to Medical School, by courtesy of the Dean. Professor I. Gordon.
8 p.m.	Recent advances in paediatrics. Professor H. L. Wallace.

Friday 23 June 1961

9 a.m.	Intermittent positive pressure respiration in medicine. Professor E. B. Adams.
10.15 a.m.	Morning tea.
10.45 a.m.	The modern approach to alcoholism. Dr. R. W. S. Cheetham.
11.45 a.m.	The modern treatment of head injuries. Mr. M. J. Joubert.
2 p.m.	'Any Questions.' (Answers by a panel of specialists.) Afternoon tea. Votes of thanks.

Applications to attend should be sent to: Miss B. M. Deeks, Nurses' Home, Addington Hospital, Durban

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PASSING EVENTS : IN DIE VERBYGAAN

College of Physicians, Surgeons and Gynaecologists of South Africa: Margaret Orford Memorial Lecture 1961. The Council of the College has pleasure in announcing that it has invited Prof. O. S. Heyns, Professor of Obstetrics and Gynaecology, University of the Witwatersrand, to deliver the Margaret Orford Memorial Lecture for 1961.

The title of the Lecture is: 'A device to improve foetal oxygenation', and it will be delivered in Pretoria, Johannesburg, Cape Town, Durban, Bloemfontein, Port Elizabeth and East London. The first lecture will take place in Durban, at 8 p.m. on Thursday 8 June 1961, at the Medical School, University of Natal. The dates and venues of the lectures in the other centres will be announced later.

Kollege van Interniste, Chirurge en Ginekoloë van Suid-Afrika: Margaret Orford-gedenklesing 1961. Die Raad van die Kollege kondig met genoeg aan dat hy prof. O. S. Heyns, hoogleraar in Verloskunde en Ginekologie aan die Universiteit van die Witwatersrand, uitgenooi het om die Margaret Orford-gedenklesing vir 1961 te gee.

Die titel van die Lesing is: 'A device to improve foetal oxygenation', en dit sal in Pretoria, Johannesburg, Kaapstad, Durban, Bloemfontein, Port-Elizabeth en Oos-Londen gehou word. Die eerste lesing sal in Durban by die Mediese Skool van die Universiteit van Natal op Donderdag, 8 Junie 1961, om 8 nm. plaasvind. Die datums en plekke vir die lesings in die ander stede sal later bekend gemaak word.

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Mr. Arthur Helfet and Mr. George Dall, orthopaedic surgeons, have decided to dissolve their partnership as from 31 May 1961. From 1 June, Mr. Helfet will continue to practise with Mr. Rael Jaffe, F.R.C.S. (Eng.), F.R.C.S. (Edin.) at 904 Medical Centre, Cape Town; telephone 410597. Mr. Dall will practise at 803 Medical Centre, Cape Town, telephone 36439.

Dr. Arthur Helfet en dr. George Dall, ortopediese chirurje, het besluit om hul vennootskap te beëindig van 31 Mei 1961 af. Van 1 Junie af sal dr. Helfet voortgaan om saam met dr. Rael Jaffe, F.R.C.S. (Eng.), F.R.C.S. (Edin.), te praktiseer te Mediese Sentrum 904, Kaapstad, telefoon 410597; en dr. Dall sal te Mediese Sentrum 803, Kaapstad, praktiseer, telefoon 36439.

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Dr. C. C. Pretorius, obstetrician and gynaecologist, of Pretoria, has changed his address as from 1 June to 521 Vigilans Building, 287 Pretorius Street, Pretoria. Telephones: Rooms 34920, residence 784067.

Dr. C. C. Pretorius, verloskundige en vrouearts, van Pretoria, het vanaf 1 Junie sy adres verander tot Vigilansgebou 521, Pretoriusstraat 287, Pretoria. Telefone: Spreekamer 34920, woning 784067.

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Dr. W. P. U. Jackson, of the Department of Medicine of the University of Cape Town, has been elected to a Fellowship of the Royal College of Physicians of London.

Dr. W. P. U. Jackson, van die Departement van Interne Geneeskunde van die Universiteit van Kaapstad, is verkoop tot 'n Lid van die Royal College of Physicians van Londen.

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Dr. W. D. F. (Fana) Malherbe, M.B., Ch.B. (Kaapstad), M.D. Chir. (Amsterdam) het na 5½ jaar magisteriale studie aan die Chirurgiese Universiteitskliniek in Amsterdam en aan die 'Plastic Surgery and Jaw Injuries Centre' East Grinstead, Engeland, teruggekeer en vestig hom as plastiese chirurg aan die Bellville Mediese Sentrum. Telefone: Spreekkamers 973926, woning 971477.

Dr. W. D. F. (Fana) Malherbe, M.B., Ch.B. (Cape Town), M.D. Chir. (Amsterdam) has returned after 5½ years postgraduate study in the Department of Surgery, University of Amsterdam and at the Plastic Surgery and Jaw Injuries Centre, East Grinstead, England. He has commenced practice as a plastic surgeon at the Bellville Medical Centre. Telephones: Rooms 973926, residence 971477.

Mr. Michael Katzen, surgeon, of Johannesburg, has commenced practice as a specialist surgeon at 214 Lister Buildings, Jeppe Street, Johannesburg. Telephones: Rooms 220428, residence 421149.

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Eastern Transvaal Branch (M.A.S.A.), Spitz Golf Trophy. A 4-Ball Better Ball Stableford Golf Competition will be held at the Standerton Country Club, Standerton, on Sunday 18 June 1961, commencing at 12 noon. The entrance fee is R2 and includes lunch, caddy ticket and 2-ball. The Competition is open to all doctors, dentists, and pharmacists, and entries can be sent to Dr. M. Spitz, P.O. Box 40, Kinross, or Mr. P. Daniel, P.O. Box 50, Standerton.

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The Convalescent Home Transvaalia is situated a few miles from Rustenburg off the Johannesburg/Pretoria/Rustenburg roads (on the leeward side of the mountain range). Patients suffering from chronic asthma and other chest and bronchial conditions are catered for. The Home can now accommodate 50 patients. The charges are R3.00 per day per person, while fees for professional services are charged separately. The Home does not accept bed cases or cases of an infectious nature.

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Association of Physicians (M.A.S.A.), Cape Western Branch. At the Annual General Meeting of this Branch, held on Tuesday 16 May 1961, the following office bearers were elected: Dr. W. F. Baumann, Chairman; Dr. A. Landau, Vice-Chairman; Dr. H. Muller, Hon. Secretary and Treasurer. As Committee members were elected: Drs. H. Brown, T. J. Dry, R. L. Tobias, W. P. U. Jackson, and M. Horwitz.

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South African Paediatric Association (M.A.S.A.), Cape Town Sub-Group. The next meeting of this Sub-Group will be held on Tuesday 6 June at 8.15 p.m. in the Lecture Theatre, Red Cross War Memorial Children's Hospital, Rondebosch. Dr. John Hansen will speak on 'Paediatrics and nutrition in the United States and Central America'. All who are interested are invited to attend this meeting.

* * *

Noristan Prize. Messrs. Noristan Laboratories (Pty.) Ltd. have announced that their Committee have decided to award the Noristan Prize for 1960 to Dr. S. Levin, of Johannesburg, for his article 'Milli-omsols made easy—some fundamental biochemical and clinical considerations, with particular reference to paediatrics'. This Prize is awarded annually for the best original contribution from a general practitioner, registered and practising in South Africa, published in any recognized South African medical journal.

* * *

University of Cape Town and Association of Surgeons of South Africa (M.A.S.A.), Joint Lectures. The next lecture in this series will be held on Wednesday 7 June at 5.30 p.m. in the E-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape. Dr. R. Mibashan will speak on 'Some surgical aspects of haematological disease'. All members of the Medical Association are welcome to attend this lecture.

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The South African Institute for Medical Research, Johannesburg, Staff Scientific Meeting. The next meeting will be held on Monday 12 June at 5.10 p.m. in the Institute Lecture Theatre. Dr. B. M. McIntosh will speak on 'Group B anthropod-borne viruses in South Africa'.

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The Tariff of Fees for Pathology procedures is now ready, and practitioners and medical aid societies requiring copies are advised that they may be obtained from the Head Office of the Association, P.O. Box 643, Cape Town, at 15c per copy. Stamps or postal orders for this amount should be included with the order.

Die Tarief vir Patologiese procedures is nou gereed. Praktisjens en mediese hulpverenigings wat eksemplare nodig het, kan hulle by die Vereniging se Hoofkantoor, Postbus 643, Kaapstad, bestel teen 15c per eksemplaar. Seëls en posorders vir hierdie bedrag moet by die bestelling ingesluit word.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPAREATIE EN TOESTELLE

PREDSON RETENTION ENEMA

Glaxo-Allenburys (S.A.) (Pty.) Limited announce the introduction of Predsol Retention Enema, and supply the following information:

Description. Predsol Retention Enema consists of a disposable plastic bag containing 20 mg. of prednisolone as the water-soluble disodium phosphate in isotonic buffered solution. It is ready for immediate use and provides a convenient means of self-administration for the treatment of ulcerative colitis.

Rationale and indications. One of the most recent forms of chemotherapy in the treatment of ulcerative colitis has been the use of corticosteroids. The early conflicting reports on the systemic use of such compounds stimulated further investigation and large-scale therapeutic trials have been conducted. The results of these trials permitted the conclusion that cortisone given orally had a considerable beneficial effect. Relatively high dosage of corticosteroids has been employed, and with the possibility of development of undesirable side-effects in mind, some form of local application was thought desirable. The introduction of the extremely water-soluble hydrocortisone hemisuccinate produced a marked histological improvement, and a further improvement in sigmoidoscopic appearance. Unfortunately solutions of hydrocortisone hemisuccinate are unstable, and to provide ready prepared solutions is not possible. This presents an undesirable inconvenience to the patient, which has been overcome by the use of prednisolone in the form of disodium phosphate.

This corticosteroid compound is water-soluble and stable, and thus possesses the required characteristics found by experience to be necessary for the provision of a preparation ready for immediate use. Simultaneously with the use of prednisolone disodium phosphate, a further simplification of technique has been introduced. It has been shown that a small volume of solution introduced fairly rapidly can be easily retained, thus avoiding the inconvenience imposed (on the patient and others) by the prolonged administration by rectal drip.

Administration. In practice the use of Predsol Retention Enema is very simple and effective, and easily undertaken by the patient at home. The enema is used each night on retiring. Full instructions for use are included in each pack.

Side-effects. In general, whilst untoward side-effects can accompany the use of corticosteroids systemically, especially in moderate to high dosage for prolonged periods, little risk is involved from local application, particularly when the amounts employed approximate those normally given systemically. Careful observation during clinical use has failed to reveal any systemic undesirable effects from rectal instillation of prednisolone.

Presentation. Predsol Retention Enema is supplied in 100 ml. disposable plastic bags, in boxes of 7.

Further information may be obtained from Glaxo-Allenburys (S.A.) (Pty.) Limited, P.O. Box 485, Germiston, Transvaal.

CELESTONE

Scherag (Pty.) Limited announce the introduction of Celestone (betamethasone) 0.5 mg. and supply the following information:

Description. Celestone is betamethasone, a new synthesized derivative of prednisolone which possesses hormonal and metabolic effects common to all anti-inflammatory adrenocortical steroids, but exhibits these effects in markedly different proportions. Celestone is available in tablets of 0.5 mg., scored for convenient fractional dosages.

Indications. Celestone is indicated in the management of various allergic, dermatologic, rheumatic, ocular and other conditions known to be responsive to corticosteroid therapy. Celestone is particularly recommended for patients who have shown a diminution in response to other anti-inflammatory corticosteroids, and may be useful in those who have developed severe, incapacitating side-effects on previous hormonal therapy.

Advantages. Celestone possesses certain advantages over older corticosteroids. It affords a greatly enhanced anti-inflammatory effect with the use of lower dosages, and certain undesirable side-effects such as abnormal salt and water retention and excessive potassium excretion are not discernible in most patients receiving usual therapeutic dosages.

No new side-effects have been observed with Celestone, and steroid effects associated with certain other corticoids, such as anorexia, protracted weight loss, vertigo, severe headache, and muscle weakness do not appear to be characteristic of Celestone. However, Celestone is a potent corticosteroid and is therefore capable of producing certain effects associated with adrenocortical therapy.

Dosage and administration. The dosage of Celestone must be determined and adjusted to the individual requirements of the patient, i.e. severity of the condition, anticipated duration of therapy, tolerance to the steroid and response obtained. As with all corticosteroids, the lowest dose that will produce the desired clinical effect should be employed.

Packaging. Celestone is available in tablet form in bottles of 30, 100 and 500.

Further information may be obtained from Scherag (Pty.) Ltd., P.O. Box 7539, Johannesburg.

CORRESPONDENCE : BRIEWERUBRIEK

THE TREATMENT OF SHARK ATTACK

To the Editor: One of the more distressing phenomena that has arisen out of the present age of medical over-publication is the author who bases his writings wholly upon text-book and journal abstractions, seasoning his literary efforts with such phrases as 'it seems to me', 'sound basic principles', and 'this discussion has more than an academic or occasional application'. Be the subject ever so far from the puny realm of his personal experience, this author is only too eager to find room to obtrude his 'observations' upon the discussion, generally garnished with an imposing list of references, possibly even more divorced from the subject than his own knowledge, but neatly 'adapted' nevertheless. I cannot but feel that Dr. D. M. Jowell, of Cape Town, has exposed himself to this kind of criticism, particularly in view of his recent remarks¹ about my paper on 'The treatment of shark attack'.² One thing to which I objected particularly in his letter was the title 'The treatment of shark attack'. He should at least have asked the Editor to have headed his letter: 'The possible application of other people's observations on shock and blood loss in the treatment of shark attack on the Natal Coast'.³ I hope most sincerely

* The title of Dr. Jowell's letter was written by us, not by Dr. Jowell. The specific heading was chosen, because it was the heading of Dr. Campbell's original article; and, in accordance with our style, letters are usually published under the same titles as the articles to which they refer—Editor.

that Dr. Jowell is not given pleasure by the fact that his utterances were reported prominently in a certain group of papers under the headline 'New light upon shark attack'. One can hardly blame him for this, but his opinions would perhaps have carried some weight if, on even one occasion, he had seen a patient so wounded, or taken the trouble to speak to doctors who have been concerned with the emergency treatment of such victims. From his letter it would appear that this was highly unlikely.

For some time, we have been concerned here in an objective study of the problem of survival of shark attack victims. Both here and in Australia it appears evident that certain people with severe wounds have survived, whereas others, such as the child attacked recently at East London, with comparatively mild injuries (see below) succumbed. We have made a survey of what treatment was afforded these patients in 5 of our own cases (in great detail), and in the cases of 10 other victims seen by Natal South Coast doctors, in an attempt to find why patients died. In spite of Dr. Jowell's quotations, it appeared early on that in the *actual treatment of shark attack on the Natal Coast*, patients responded best if sedated and resuscitated on the beach, whereas in those patients in whom this treatment was not instituted (epitomized by the recent East London attack), patients with minor injuries died. On questioning doctors concerned with these attacks, it appeared obvious that they all were against 'rushing the patient

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to hospital—these were people who spoke from first-hand experience, and not those who gleaned their knowledge on library chairs.

When I started to write the paper, I, like Dr. Jowell, spent some time upon a library chair, reading about the treatment of shock and blood loss—possibly not as much as he did, judging by his impressive list, incidentally containing only one reference to the subject in hand. Having done so, I realized that our findings were somewhat unusual, and so I decided to write an original paper on our observations. When he points out that the only reference in my paper was to a paper by myself and my colleagues, I should like to say that it was the only paper that we have been able to find in the recent medical press describing first-hand experience in these injuries. The imagination boggles at the possible motives in Dr. Jowell's mentioning Korea: firstly we are not dealing with American soldiers in action, and secondly, we are not endowed with the helicopter services by which Dr. Jowell seems to lay so much store. We are dealing with treatment of shark attack on the Natal Coast, and the paper was an attempt to summarize actual findings made here; if they conflict with Dr. Jowell's reading material, then it is obvious that if he wants to learn more about the subject (and the necessity seems obvious), he should refer to papers written upon the subject by people who have made actual observations upon it.

There would appear to be, among others, two factors which are important in whether the patient survives or not: (a) which major vessels are severed—that is to say, it appears immaterial once the femoral is severed, whether the profunda is cut or not, or whether the posterior tibial is severed, whether the anterior tibial is cut or not, this almost certainly being due to the not inconsiderable crushing component of the bite; and (b) what treatment is given on the beach. In the last year, for example, we have examined 5 cases in detail, and our findings are summarized in the following table:

Grade of injury	Description of injury (major vessels cut)	Apparent prognosis	No. of cases 1960	Actual treatment given	Actual result of this treatment
Grade One (Fatal)	Both femoral cut. One femoral, and one posterior tibial	Always fatal	1	Nil possible	Patient died in the water
Grade Two (Very severe)	One femoral. One brachial. Two posterior tibials. Abdominal wound with visceral involvement	Should live, if proper beach treatment instituted	2	Beach resuscitation, morphine gr. $\frac{1}{2}$ in both cases	Both survived
Grade Three (Moderate)	One posterior tibial. Superficial abdominal or limb injuries	Should always live with proper beach treatment	2 { 1	Rushed to hospital* Beach sedation, morphine	Died in the ambulance Recovered satisfactorily, as all grade three should

* Note—the treatment advocated by Dr. Jowell.

The number of cases is small, but it is interesting to note that the only patient who should have been saved out of 4 and who was not, was the one with moderate injuries who was subjected to Dr. Jowell's line of treatment—the patient dying shortly after being put into the ambulance and being rushed to hospital. The inferences are obvious, and until we have a larger series of our own observations proving that beach resuscitation and morphine are not the correct therapy, we will rely on our experience rather than upon Dr. Jowell's book-learning. Perhaps, if Dr. Jowell knew more about Natal Beach conditions, he would not have inflicted his review of overseas methods of treating shock upon us.

Finally, I should like to reiterate that my paper summarized emergency measures that have proved effective here, and all the literature quoted by Dr. Jowell, and all the helicopter services that he may advocate, will not change the minds of my colleagues or myself on what we believe to be the best course in these cases. It is perhaps trite to say that until Dr. Jowell has made personal examinations or investigations of such cases, his opinions on this subject will be superfluous. We have at least made observations and not indulged in text-book pruning. Furthermore, Dr. Jowell's utterances, which have been widely reported in the local

press, have done great damage to the programme of Shark Attack First Aid here, and I should like to say that unless he is prepared to substantiate his remarks by accounts of personal experience, it would only be gentlemanly for him to retract his statements in the pages of this *Journal*.

G. D. Campbell

1117 Colonial Mutual Buildings
West Street
Durban

1. Correspondence (1961): S. Afr. Med. J., 35, 280.
2. Campbell, G. D. (1961): *Ibid.*, 35, 92.

PAMPHLETS AND SAMPLES

To the Editor: I am compelled to write to you in the hope that this letter will catch the eye of the pharmaceutical firms who daily bombard this hospital with thousands of expensive medical pamphlets and bulky samples of new drugs. Not only is it a waste of money, but this avalanche serves no purpose other than to clog the hospital postal services and overload the wastepaper baskets and incinerator.

Baragwanath Hospital has an Advisory Pharmaceutical Committee consisting of Heads of clinical departments, whose duty it is to investigate every new drug and appliance before recommending its use; and the shower of extravagant medical literature serves no useful purpose. Moreover, junior medical staff are not allowed to prescribe any but the most simple drugs without the concurrence of their superiors.

Another source of irritation is that generations of housemen, who have long since left the hospital, are still receiving advertising mail at this address. A glance at the Medical Register and quarterly supplements would yield their new addresses, thereby avoiding further trouble and expense.

No. of cases 1960	Actual treatment given	Actual result of this treatment
1	Nil possible	Patient died in the water
2	Beach resuscitation, morphine gr. $\frac{1}{2}$ in both cases	Both survived
2 { 1	Rushed to hospital* Beach sedation, morphine	Died in the ambulance Recovered satisfactorily, as all grade three should

We welcome medical representatives and have set aside a portion of the doctors' tea room for their convenience in order to enable them to demonstrate their products, the space for which can be reserved free of charge. As we have over two hundred full-time doctors on our staff, this personal contact would be much more efficacious and yield better results.

I. Frack
Superintendent

Baragwanath Hospital
Johannesburg
23 May 1961

TRANQUILLIZERS

To the Editor: In reply to Miss I. I. Marwick's letter¹ on tranquillizers, I feel obliged to state the following facts.

Methyprylon (Noludar) is not a tranquillizer. As a piperidine derivative, it belongs pharmacologically and clinically to the group of sedative-hypnotics. Its sedative action is mild which restricts its day-time use considerably. Methyprylon has its main place in therapeutics as a mild hypnotic. Addiction to this drug is unknown. Habituation is as common to methyprylon as it is to any other drug or remedy which alleviates symptoms falling into psychosomatic medicine. Habituation, by definition, is a psychological factor which has its origin in the patient and not

in the drug. Mankind becomes addicted to very many media which are as different as aspirin is from promiscuity.

The pharmacology, chronic and acute toxicity, metabolism (which includes half-life) excretion rate, tissue distribution, and elimination from fluids and tissues of methyprylon have been thoroughly studied by all available modern methods (including the use of chromatography and radio-active labelling). The material at my disposal is far too vast to allow me even to mention the references in the frame of this letter. The sum total of work done, however, is responsible for my use of the term 'mild, practically non-toxic, non-habit-forming, quickly eliminated (i.e. ± 40% within four hours, 61% within twelve hours and completely eliminated in less than 48 hours), intermediate-acting hypnotic' as a description of Noludar.

I therefore fail to see how this preparation can be labelled as being 'particularly harmful in its effects', quite besides being misnamed a 'tranquillizer'.

When reading the resolution of the South African Nursing Association that 'the attention of the medical profession should be drawn to the abuse of tranquillizers . . .' I could not help but associate myself with the remark of one of my senior colleagues that it constitutes meddlesome and unwarranted interference, as well as a slanting attack on the integrity of the medical profession. My work brings me constantly into contact with almost all psychiatrists in the Union, and a large number of all types of senior colleagues. The use and abuse by the public of not only psychotropic drugs, but the habituation to any drug is constantly in the foreground of medical thought. To suggest, therefore, in a resolution of the above nature that it might not be so, is certainly an unwarranted attack on the medical profession and must uselessly alarm the layman as well. It interferes with the confidence he requires in his medical practitioner if he needs the full benefit of treatment. The attack is therefore not only on our profession, but even more malignant in its nature on the general public, which subsequent lay correspondence in the newspapers has proved.

Nobody knows better than we medical men the importance of cooperation between us and the nursing staff, and the tremendous help that patients derive from skilful handling and observation by that staff. Absolute understanding and cooperation between doctor and nurse is not only essential, but has been practised since the days of Florence Nightingale by the better members of both professions.

From what has been said, it should be obvious that the attack of the nursing profession on the doctor is considerably more serious than it appeared at first when one read this foolish and misleading resolution which was immediately exploited by the newspapers and did great harm. Furthermore, it proved that those who formulated the resolution and associated themselves with it later are ignorant of the subject matter.

Scientific Department
Roche Products (Pty.) Limited
Johannesburg
18 May 1961

W. Leigh
Scientific Advisor

I. Correspondence (1961): S. Afr. Med. J., 35, 400.

CONTRACEPTIVE DIAPHRAGMS

To the Editor: The figures quoted in an article¹ published on 22 April 1961 in the *Journal*, entitled 'The use of contraceptive diaphragms—a follow-up study of a group of women', originate from a clinic which is not affiliated to our branch 'The Natal Planned Parenthood Association', which was only started in 1959 and is doing excellent work. As a member of both the governing body and the Medical Committee of the International Planned Parenthood Federation, whose headquarters are in London, and as National President of the organization in South Africa, I cannot agree with the findings based on 137 cases. Millions of our diaphragms are supplied annually throughout the world, and in South Africa alone (between 1958 - 1959) plus or minus 15,000 patients were fitted with diaphragms which they have used very successfully. As our work lies almost entirely among the underprivileged, we naturally find that the bulk of our patients are non-Europeans.

We have clinics in many centres, and the only limit to our work is lack of finance and trained personnel.

It is all-important that the initial approach, fitting, and teaching of the patient be acceptable to husband and wife to ensure their full cooperation and successful use of these methods.

It is with this in mind that we are now endeavouring to open teaching clinics for doctors and nurses in most large centres.

J. Morrison
President

14 Young Road
Mill Park
Port Elizabeth
9 May 1961

I. Chesler, J. (1961): S. Afr. Med. J., 35, 323.

INCREASED MEDICAL AID FEES

To the Editor: I was apalled to be confronted at a recent Southern Transvaal Branch (M.A.S.A.) meeting in Johannesburg with a six-point agreement which has been approved by the Central Contract-practice Committee, concerning the 25 cents increase in medical aid fees for visits and consultations by general practitioners.

The humiliating position in which we find ourselves, being dictated to by medical aid societies for terms and conditions on which *they are to enjoy a preferential tariff*, is not only of the gravest danger to general practice as a whole, but raises some very pertinent questions as to the value of the Medical Association in safeguarding the interests of its members.

An explanation from the Central Contract-practice Committee that the required increase in fees by 25 cents is 'to bring G.P. fees into better relation with fees of specialists' shows that the whole position is being incorrectly equated. Thus, I cannot help feeling that the Central Committee for Contract Practice are decidedly out of touch with the realities of general practice in a city like Johannesburg. It might therefore be expedient to mention some of the peculiarities of such practice in Johannesburg:

(a) Great distances—frequently more than 10 miles between calls. No mileage fees apply in the medical aid schedule, since such distances are within city limits.

(b) With the specialist facilities available in Johannesburg, the general practitioner's livelihood is more and more dependent on consultations and visits rather than the 'procedures' and 'operative fees'.

(c) The high costs of practice and living and the traffic congestion, with considerable wastage of time, are all too well appreciated to be expounded further.

(d) It should also be appreciated that practices in various areas of Johannesburg differ in their conditions and income.

It must be clear to anyone who investigates the position of the general practitioner in Johannesburg that the above peculiarities of practice are not adequately compensated for (with reference to conditions that obtain elsewhere in the country) by a mere 25 cents higher consultation fee and a 25 cents higher visiting fee. In my humble opinion (to give an example), the fair and dignified fee for a general practitioner's visit in Johannesburg's Northern areas should be in the region of treble the present country fee.

Now it would seem that for a 'mess of pottage' we are to have limitations placed on the 'procedures' in the schedule, and a reduction of 50% in fees for injections *after the first*, and to add further 'fuel' we are to be bound by a 5-year contract not to alter the fees again—the mere legality of which also raises questions.

It appears that either the Central Committee for Contract Practice must come to grips with the general practitioner's situation in Johannesburg very quickly, or the general practitioners themselves will enunciate their own schedule of fees, if needs be on an area basis within the City.

A. D. Bensusan

Houghton
Johannesburg
16 May 1961

[If Dr. Bensusan's suggestions are carried out, all medical aid societies will have to stop operating and we will have to revert to the system of charging private fees and accepting, among other things, the responsibility for our own bad debts.—Editor.]